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THE DIFFERENTIATION IN THE CHARACTERS AND SYMPTOMS OF GASTRO-INTESTINAL AFFECTIONS.*

BY THOMAS WALLEY, PRINCIPAL OF THE EDINBURGH VETERINARY COLLEGE.

IN the published notice of this meeting, you will observe that the title of my paper is "The Differentiation in the Characters and Symptoms of Gastro-Intestinal Affections." This is a very wide subject, but one of immense importance to the profession, inasmuch as diseases of the alimentary canal form a large percentage of the practitioner's daily work.

It would have been much better could I have arranged to give three lectures on this subject; but as circumstances would not permit of this, I must ask you to pardon me if, although I have curtailed much that I would have wished to introduce, my paper appears somewhat lengthy.

In only taking the characters and symptoms of this group of diseases into consideration, I have done so from the conviction that good diagnoses are infinitely better, in the long run, than good cures, and a thorough knowledge of the salient points in an enemy's armour always gives a great advantage in a combat.

* An address delivered at the meeting of the Liverpool Veterinary Medical Association, on August 13, 1875.

The first part of my paper I have devoted to what may be looked upon as "results" or "symptoms," the second part to the diseases themselves.

Indigestion.

Indigestion, or an inability in the digestive organs to reduce the food submitted to them to a state fit for assimilation, may be (1) *acute*, (2) *sub-acute*, or (3) *chronic*.

The causes may be (1) *autogenetic, i.e.*, due to some defect or defects within the digestive apparatus itself, its accessory, or even adjacent, organs, or the nervous system, particularly the sympathetic and tenth nerves; or (2) *heterogenetic, i.e.*, due to causes introduced from without.

1. *Acute Indigestion.*

Acute Indigestion, "plethora," or "over-distension of the stomach," is that condition generally known by the various cognomens of "engorgement," "surfeit," "impaction," etc. The term is not confined alone to the stomach, but is equally applicable to the same condition of the intestines in the horse, and the crop in poultry. It is always present, more or less, in diseases of the brain and injury to the tenth nerve; but the most frequent cause is injudicious feeding—the allowance of large quantities of food in an improper condition: in pigs, meals, especially Indian, cabbage stems, and diseased or decomposing organic matter; in poultry, large quantities of Indian corn, barley, or other grain in its perfect state, without a sufficient allowance of gravel or lime; in horses, cattle, and sheep, impure or irritating cakes, feg, ling, old or dirty turnips, half-dried turnip-tops or cabbage leaves, succulent, frosted, or over-ripe rye or other grass, dry meals, chaff, brewers' draff, mow-burnt, flooded or mouldy hay, bean or wheat-straw, beech-mast, acorns, potatoes, wheat, and a variety of other substances, or a combination of two or more of those above enumerated. In the case of soft food, or very succulent material, animals do not take the trouble to submit it to proper mastication and insalivation (especially in the early spring, and with the first allowance); neither are they particular as to the quantity they devour, generally eating, in fact, until the

stomach rebels against the introduction of any more. The great weight thrown upon the coats of the stomach paralyses it—especially is this the case if cold, as in frosted vegetable matter, is superadded—a sufficient quantity of mucous or gastric juice is not secreted to permeate the mass, or exert its beneficial influence upon it, and consequently it undergoes fermentation or decomposition, and the attendant results of the latter process follow.

With large quantities of dry or other irritating material, we have (1st) imperfect mastication and insalivation—the latter resulting from the want of the proper stimulus to the salivary glands; (2nd), arrestation of the gastric mucous and other secretions, due to exhaustion of the glands from the primary exaltation of their functions by the irritation of the material contained in the stomach; and also paralysis of the stomach itself.

In acorn, potato, wheat, and beech-mast poisoning, I have been long convinced that in the process of decomposition a peculiar poisonous principle is generated, which produces a systemic intoxication, quite independent of the local effect of the material itself.

Whatever may be the causes of acute indigestion, the resulting consequences and symptoms are similar. The first are, pressure upon the sympathetic and tenth nerves and semilunar ganglion, and *congestion of the brain;* or pressure on the above-mentioned nerves and the diaphragm, and *congestion of the lungs.* The second are, distension of the region of the stomach, with the evincing of pain or uneasiness on pressure, loss of appetite, tympany, disturbance of the pulse and respiration, vomiting, or attempts at it, in the pig; rectal temperature not much increased, extremities cold, and abdominal or gastric pains, the latter being shown in the horse by looking to the epigastric region, and stretching the fore-legs out in such a way as to bring the front part of the thorax towards the ground. If the brain becomes congested, the animal is comatose, the eyelids droop, the mucous membranes are dark coloured, the breathing stertorous, the pulse oppressed and below the natural standard; eyes amaurotic; head pendulous, bored into a corner, or resting on any prominent object; loss of function (more or less marked) in the

nerves of special sense; primarily diarrhœa, followed by retention of fæces; disinclination to move, or, if made to do so, progression is unsteady, and the animal shows a tendency to perambulation, moves giddily, or wanders aimlessly and mopishly about, striking its head or body unconsciously against prominent objects, and very frequently partial or total paralysis follows; the blood, if a vein is opened, flows slowly, and is of a dark colour; and muscular tremors or twitchings are noticed more or less generally over the body. If inflammation of the brain sets in, all the concomitant symptoms of this condition are superadded, and many of those above enumerated reversed. Owing to these different states of the cerebral system, the various terms of "stomach staggers," "mad staggers," and "grass staggers" have been given to this gastric vertigo. Many horses may collapse before the advent of brain symptoms.

If pulmonary congestion takes place, the usual symptoms of this affection are present.

Sub-acute and Chronic Indigestion

Are modifications of each other, and the former is a modification of acute. They are also produced in many instances by a modification of the same causes, independent of which we have the lodgment of foreign bodies, or masses of sand, in the stomachs of cattle, or in the intestines of other animals; organic disease of the gastro-intestinal tract, its accessory glands, or the lungs and heart; presence of worms in intestines; circumscribing of the stomach and intestines, by the pressure of abdominal growths or peritoneal adhesions; improper insalivation of the food, from disease, loss, or changing of the teeth, or disease of the salivary glands or their ducts.

2. *Sub-acute Indigestion.*

In the case of young animals—foals, calves, and lambs—*Sub-acute Indigestion* is brought about, *firstly*, during the time they are sucking the dam, from allowing too long an interval to elapse between each time of feeding, or the milk of the mother being in an impure state; from disease of the udder, systemic, blood, or zymotic affections, or from improper feeding. *Secondly*, from

allowing large quantities of artificial food at long intervals; in this case also—as when the offspring is kept from its dam for too long a period—imperfect salivation takes place from the greedy way in which the animal swallows its food. *Thirdly*, in ruminants, from the milk finding its way into the rumen, owing to the rapid manner in which it is forced (when the animal has been fasting, or when fed artificially) down the œsophagus.

Sub-acute Indigestion in the horse is usually confined to the colon, and is distinguished from other intestinal affections by the pulse and breathing not being much interfered with, absence of perspiration, retention of enemata, presence of large masses of fæces in the colon, as detected by rectal exploration, non-increase of rectal temperature, pawing with fore-feet, and other signs of abdominal pain, evinced at lesser or greater intervals, and usually of a dull lingering character. The animal, when recumbent, lies flat on its side, with the head occasionally turned to the epigastric region or abdomen, and retained there for a short time; and in the act of lying, a kneeling posture is sometimes assumed for a few minutes. Counter-irritants act freely, the appetite returns in the intermissions of pain, and water is seldom refused. Catharsis is with difficulty established, and the body has a rotund appearance. These symptoms may continue for several days without relief, or may terminate in Enteritis.

3. *Chronic Indigestion.*

Chronic Indigestion is marked by general interference with the normal functions of the body, and also the normal processes of nutrition. Consequently, the animal suffers from a perverted appetite, as indicated by its devouring almost any filth or unnatural matter which it can obtain; licking walls, earth, the genitals or skin of its companions, stones, etc.; there is emaciation, foul odour of mouth, persistent tympany, sometimes diarrhœa, sometimes constipation, the fæces often being fœtid, and the solid portions imperfectly comminuted. There is also a harsh, dry, and tense condition of the skin; inability to bear exertion; a weak, irritable pulse; palor of the mucous membranes; vomiting in the dog, pig, and cattle; fœtid eructations in the latter, and in the dog and horse expulsion of fœtid gas *per*

anum. In the horse, Chronic Indigestion frequently gives rise to "Megrims," "Broken-wind," and "Roaring."

Indigestion, especially acute, is the most frequent cause of Gastritis and Enteritis.

Vomiting.

Vomition is easily accomplished in animals with a simple stomach—as the omnivora and carnivora—and in these is frequently excited for curative purposes; the latter class also exciting it instinctively by devouring the *triticum repens;* moreover, in dogs the anatomical relation between the stomach and liver materially facilitates the act. In the horse, in fowls, and in sheep, the ejected matter is discharged indiscriminately by the mouth and nose; in other animals by the mouth. *Functionally*, it indicates some irritable condition of the stomach or stomachs, which the introduction of food excites, bringing on violent contraction of its walls; and it is often an effort of nature to get rid of offending matter from the stomach, as indigestible food, such as grains in cattle—hence "*grain sick*"—Indian corn or peas in horses and poultry, Indian meal in pigs, and in the cat and dog of worms. *Symptomatically* it is, in the dog and cat, seen in the early stages of many diseases, as Rabies and Distemper; it is a concomitant symptom of uterine, ovarian, hepatic, œsophageal, stomachic, intestinal, cerebral, and aural affections, and is a frequent accompaniment of pregnancy and œstrum in the bitch. In the dog it is also produced by any disease—especially enlargement from any cause—of the spleen, pancreas, or lymphatic ganglia in the small curvature of the stomach. In cattle it is often caused by foreign bodies within the cavities, or penetrating through the coat, of the stomach.—*Stercoraceous vomiting* can only occur in the dog, pig, and cat, and is always indicative of occlusion of the intestines. Malænic and bloody vomiting result from the admixture of blood, and are seen in blood diseases, or as the result of injuries to the mucous membrane of the stomach, œsophagus, pharynx, fauces, nasal passages, or mouth, and frequently of rupture of vessels during the efforts of vomition. If the dark colour is the result of effusion or extravasation in blood disease, the mass is either uniformly coloured or inter-

mixed with clots, more or less large, of dark-coloured or grumous blood; if it is due to other causes, the blood is more scarlet in hue, and exists in streaks; if due to cancer or ulceration, it is accompanied by fœter. When symptomatic of Rabies, the vomit is chocolate-coloured, and heterogeneous in composition. Emesis, due to gastro-enteric disease or derangement, is accompanied by symptoms indicative of these conditions; but if due to reflex irritation, as in brain disease, the pathognomonic symptoms of gastro-intestinal disease are absent, and usually vomition is performed with greater facility.

Toxicologically, vomition is of great value, as the toxic agent can frequently be detected in the ejected mass. In the horse this form of emesis is only seen in white hellebore, yew, and aconite poisoning, and in cattle and sheep by rhododendron.

Vomition in itself is not much to be dreaded; but if it persists, emaciation and debility are the inevitable results; if very violent, it frequently gives rise to serious organic lesions.

Tympany.

Tympany frequently results from the withdrawal of nervous energy or control from the stomach and intestines, as in disease of the brain, or when poisonous agents, as toxic organic matter, acting on the brain directly or indirectly, have been administered, or have gained access to the blood; from paralysis of the coats of the stomach or intestines; from mechanical interference with their natural functions, as in choking, over-gorging, and eating large quantities of cold frosted grass, or grass bathed in dew; the existence of organic disease within or adjacent to them, and circumscribing their action; this is also seen when an animal—especially a ruminant—is placed in an unnatural position, as on its back; from the functional repression of the natural secretion by an irritant, mechanical, chemical, medicinal, or verminous. In the latter case the tympany makes its appearance suddenly in horses at work, or immediately after coming into the stable from work. Indigestion may undoubtedly be looked upon as the most frequent cause of Tympany. Whatever be the actual cause, it must be borne in mind that so soon as the vital laws which regulate digestion are in abeyance, the chemical laws come into

play, and the larger the quantity of material in the stomach and intestines, and the greater the tendency in the mass to undergo fermentation and decomposition, the more serious will be the danger to life, this being in exact ratio with the amount of gas generated. The distribution of Tympany differs in different animals; thus, in ruminants, it is most noticeable in the left upper flank; in other animals it is first seen in the upper flank on one or both sides, soon becoming equally distributed over the whole abdominal region. The characteristics of Tympany also differ; thus, if in cattle, it is due to slow decomposition of solid matter, or to the evaporation of dew in *dew-blown* or *fog-sickness:* the solid matter can be distinctly felt through the superficial stratum of gas; and if the trocar is introduced, the distension quickly subsides, and the gas escapes freely, without any blocking up of the canula. If it is due to active fermentation and decomposition of succulent matter, the resonance on percussion is less distinct, and a feeling is conveyed to the hand as if of a mixture of gas and semi-fluid material, while auscultation detects a great increase in the natural seething or surging sound of the stomach. On the introduction of the trocar, the gas rushes violently out, mixed with semi-fluid matter from the stomach, and this is frequently replaced by pure foam. The canula is soon occluded, and requires careful watching to keep it open. If rumenotomy is performed, the contents of the stomach surge out of the opening in the most violent manner.

It is in this latter form of Tympany that the introduction of the trocar and canula seldom gives relief, and is so often followed by the diffusion of gas through the subcutaneous connective tissue of the body. If the Tympany is the result of decomposing potatoes or grains, the odour evolved is extremely fœtid; if the result of the evaporation of dew, it is sweet and herbaceous.

The attendant symptoms of Tympany are: pulse more regular than in spasm of the intestines, often becoming oppressed, at other times soft, and finally indistinguishable; pain more subdued and more abiding; mucous membranes extremely dark from non-oxidation of blood; superficial veins distended from pressure on the large internal trunks and the lungs; and from this

same cause an animal will often stand obstinately, with all its legs propped out, both for support and in order to enable it to bring the extraordinary muscles of respiration into play. If the recumbent position is assumed, the standing posture is quickly regained. There is also eructation of gas, easily accomplished in the ox, but a difficult process in the horse, and always in the latter accompanied by spasm of the œsophagus and screaming; the bowels are primarily excited, small quantities of pultaceous matter being frequently discharged. After a time, when the rectum is emptied, there is non-passage of fæces; the mucous membrane of the gut becomes prolapsed, great obstruction is experienced in endeavouring to pass the hand into its interior, and enemata are not retained. Small quantities of urine are frequently evacuated from pressure on the bladder; the extremities are cold, the breathing laboured and thoracic; the eye prominent, suffused with tears, and its pupil dilated; difficulty of deglutition, rendering the exhibition of fluid medicines dangerous; if blood is withdrawn from the veins, it flows slowly, is dark in colour, and clots quickly but imperfectly. Finally, the animal staggers about, falls with head extended, saliva flowing from the mouth, and tongue protruded. Coma or convulsions supervene, and death soon follows.

If rupture of the stomach or the diaphragm takes place, temporary relief is afforded; but the pathognomonic symptoms of these lesions are not long in making their appearance. In pregnant animals, abortion is a frequent result of exaggerated tympany, from the disturbance of the materno-fœtal circulation; in the dog and pig vomition is an accompaniment.

Colic.

The term "colic" is a misnomer, literally referring, as it does, to the colon, though it has become the generally accepted signification of the existence of abdominal or gastric pain; hence its division into "spasmodic," "hepatic," "biliary," "verminous," "nephritic," "flatulent," "metritic," etc.

However Colic may be shown, it is usually only an attendant upon some well-defined or definable lesion in one of the abdominal organs, though we may and do have violent spasmodic

pains produced by inordinate contraction of the muscular coat of the intestines, as the result of irritation or exposure to cold when heated, giving rise to determination of blood to the internal organs—the intestines in common with others. It is also produced by temporary effusions at the outset or during the course of zymotic affections. In cattle, spasm of the intestines is so violent in some cases as to produce remarkable contortions of the body, delirium, and profuse perspiration, with bellowing and paralysis; and in the dog, howling and whining; the pig under similar circumstances tearing up the floor of its house, champing its jaws, rolling its eyes about, and screaming. I have often found that the more violent an attack of this sort was, the more readily it yielded to the influence of remedial agents. Abdominal pain is expressed in a great variety of ways—as cringing or twisting of the body, lashing of the tail, kicking and stamping with the feet, alternate lying and rising, and throwing the head back, or looking towards the sides, rolling, kneeling, sitting on haunches, dashing head against the wall or other objects, etc. Abdominal pain, as the result of Hepatitis, may be easily confounded (especially by gas or candle-light, or in a dark box) with Enteritis, etc., but is distinguished by the characteristic symptoms of acute liver affections.

Diarrhœa.

Ordinary Diarrhœa may be looked upon as a simple catarrh of the intestinal mucous membrane, or increased flow of the natural mucous secretion, with increased or decreased intestinal peristalsis. In the former case the discharges are forcibly ejected, in the latter they are allowed to flow out in an involuntary stream. It is brought about by acidity or the presence of irritating matter in the digestive tract. Thus in cattle and sheep it is produced by worms, succulent or partially decomposing grasses, decomposing turnips, etc.; in the pig and dog it is caused by eating too freely of horse-flesh, and in this case the discharges are always black in colour. In the pig it is also produced by the too liberal allowance of whey, and is accompanied by tenesmus and *prolapsus recti*, the animal becoming lean and "pot-bellied." In cattle it is brought on by excite-

ment, as in parturition, or being taken from a quiet rural district to an auction mart, or when put in a railway train for the first time. In all animals it is produced by exposure to cold and wet, by drinking large draughts of cold water when heated, or by being submitted to exertion with a full stomach.

"Compensatory Diarrhœa" is seen in diseases of the skin and kidneys, and as the result of super-abundance of the fluid constituents of the blood, or from lowered density of that fluid. It is often caused by the endeavour on the part of the intestinal mucous glands to get rid of deleterious or morbific matter in the blood, the glands frequently becoming vicariously sacrificed in the attempt. A mixed condition of the fæces, *i.e.*, semi-fluid matter, with solid masses floating in it, is seen in restoration of the stomach and intestines to their normal functions after constipation. When Diarrhœa occurs in the early stages of gastro-intestinal affections, it forewarns us frequently of coming constipation.

Ordinary Diarrhœa is distinguished from symptomatic by the suddenness of the attack, by its evanescence, by the fæces retaining their natural colour, by the absence, as a rule, of tenesmus or straining, and of febrile symptoms. Pain on pressure over the abdomen, cough, colicy pains, and great thirst may, however, be present, and there may be also suspension of lactation in milch animals, and impaired appetite in all. It is the *finale* of many diseases, and if neglected may go on to Chronic Diarrhœa, or lay the foundation for structural alteration of the intestines. It always acts as a predisposing or even exciting cause of many diseases, from the debility which it induces; and if allowed to go on unchecked, the natural fæces gradually disappear, and are replaced, firstly by water, secondly by mucous, and lastly by blood, sometimes mixed with bile.

Very acute Diarrhœa is only a modification of *ordinary*. It is most frequently produced by inordinate doses of purgative medicine, is accompanied by febrile symptoms, and is often itself a symptom of Gastro-enteritis.

Chronic Diarrhœa may be a sequel of ordinary or acute Diarrhœa, but most frequently it results from organic disease of the coats of the intestines or intestinal glands; as ulceration,

scrofulous deposits, Cancer, chronic verminous disease, etc. It is also symptomatic, in many instances, of disease in other and remote organs. It is often accompanied by a cough; the pulse may or may not be heightened, but it will be weak, tremulous, and irregular; the appetite is fickle or voracious; the body emaciated; there is great thirst in cattle and sheep; sunken eyes and gnashing of teeth; unhealthy condition of skin; tympany, and frequently local dropsies; though, as a rule, when diarrhœa and dropsy occur as symptomatic of disease, the one predominates over, or is replaced by, the other.

As a *symptomatic* phenomenon, Diarrhœa is *skittering, i.e.*, the discharges are composed of water, intermingled with particles of imperfectly digested food; from two to six or eight discharges may thus take place, and it is an invariable precursor of constipation. Hence it is seen in the early stages of "Red water" and in indigestion, as the result of impactment by beech-mast, wheat, acorns, cakes, half-dried vegetable matter, etc.; it is also seen in vegetable poisoning. It may be *involuntary, i.e.*, the discharges flowing in a continuous even stream, without any effort on the part of the animal itself; and in cattle and sheep they are of the natural colour, with the formation of bubbles of HS gas on the surface of the mass, when it is allowed to remain quiescent. It is seen in the last stage of many chronic affections, notably of Tuberculosis.

The discharges may be *clay-coloured and fœtid* in disease of the liver, or *black and sometimes fœtid* from inordinate doses of mercurials, and in the pig and dog, from eating raw horse-flesh. *Melænic* in blood diseases; *sanguiferous* in Dysentery, rupture of blood-vessels as the result of straining, Hyperæmia, external and internal injuries, ulceration—cancerous, tuberculous, or otherwise—Polypi, Piles, etc.; *chocolate-coloured and fœtid* in last stage of Distemper in the dog, and other zymotic affections (from degenerative vicarious disease of the glands) and inflammation of the bowels; *slate-coloured* in lead-poisoning in cattle, and Gastro-enteritis; *yellow, fœtid, acrid, or sour* in Indigestion in calves or lambs; *white and somewhat pasty* in similar circumstances as preceding; *pea-green* in lymphadenomatous or other disease of the pancreas and intestinal glands; *grass-*

green from worms in the cœcum of sheep, lungs of cattle and sheep, and from eating succulent grass; *rice watery* in last stages of Eczema, Distemper in dog, Smallpox in sheep, Rinderpest, Enteric Fever, etc.; *soapy* after administration of linseed oil, and in wheat-poisoning; *lymphoid* in Enteric Fever, Rinderpest, and Croupous Inflammation of the mucous membrane of the intestines; *oily* in disease of the mesenteric glands. In the discharges, too, we can, by careful microscopical research, detect the cells and *debris* of Cancer and Tubercle, and the ova of worms.

(*To be continued.*)

ARTIFICIAL EYES FOR HORSES.

BY W. FIELD, JUN., M.R.C.V.S., LONDON.

My attention having been called to a paragraph in the *Veterinarian*, with reference to *artificial eyes for horses*, I sent to Berlin for some. It was only on the 27th of last month that I met with a subject to try my skill upon, and thinking that this, my first case, may interest the readers of the *Veterinary Journal*, I herewith send particulars.

The animal in question was a bay coach horse of some value, whose left eye had been destroyed by a blow, and the eye-ball was wasted and unsightly. His owner, interested in the experiment, gave him over to me, and was present at the operation. He suggested that the horse should be cast; but as I never care to throw a horse unnecessarily, for fear of an accident by injury to spine or otherwise, I determined to try what I could do without resorting to this measure. Having strapped up the near fore-leg and put a twitch on the nose, I took a firm hold of the eyelashes of the upper lid, and slipped the horn disc, or artificial eye, underneath it, but discovered that the one I had selected was too large. However, I soon found a smaller one, and having smeared it with glycerine, it was inserted without any difficulty; then drawing down the lower lid as far as possible, it slipped easily into the cavity. The animal immediately closed the lids, and there was a copious flow of tears; the twitch was taken off, the strap on the leg undone, and the

horse led about for a few minutes. The operation caused but little, if any, pain; the lids were soon open, and the effect, so far as appearances were concerned, was better than I could have expected. A casual observer would scarcely have noticed that there was anything unusual; but, of course, any one at all conversant with the subject could not fail to remark the wasted look of that part of the face. At any rate, all who saw it admitted that the animal's appearance was much less unsightly after the operation than before. The horse was put into a stall with a view to our ascertaining whether he would try to rub it out. As he did not appear to take any notice of it, he was sent home, and instructions were given that he was to be kept fastened on the pillar-reins until I saw him the next day. On my calling, however, I found that his owner had forgotten to take this precaution, and that the horse had been turned loose in a box. Nevertheless, as it happened, no harm had been done, and the eye was precisely as I left it the day before; there was no discharge, neither did the animal appear in the slightest degree inconvenienced by it. On the 3rd inst., or just a week afterwards, I saw him again. As yet there was nothing to observe, unless it was that the horn of the artificial eye appeared to have altered in colour, as if it had been affected by the mucous secretion. This leads me to think that the material might be improved upon. I would suggest iron or copper enamelled. This might be done, I think, without any great expense, and the capsule would be quite as, or even more, durable, easily cleaned, and not readily broken. Since writing the above, I have again seen my patient, and beyond a slight mucous secretion on the inner canthus, I do not detect any change, although ten days have elapsed. Many will argue as to the use of the experiment, beyond the improved appearance presented whilst in the stable, and, for a hack, whilst out of it. I am not aware that there is any great advantage gained; but to me, at least, it is satisfactory to know what can be done.

[The paragraph alluded to by our correspondent was translated by us from the *Magazin für die gesammte Thierheilkunde* for 1873. The veteran professor of the Berlin School, Hertwig, who was also one of the editors of that journal, successfully

employed thin capsules of dark horn to mask the unsightly appearance presented by a vacant orbit or a repulsive mass of disease—the remains of a ruptured eyeball. After describing the manufacture and dimensions of the capsule, Hertwig says that the effect of an artificial eye of this description, especially when seen at a distance, is astonishing; indeed, the illusion is complete, for it looks exactly like a real eye, and the natural appearance of the horse's physiognomy is quite restored. He further states that the eye is easily maintained in the orbital cavity, and rarely causes an increased mucous secretion or any other untoward effect. Should a little mucus cover it, this can easily be removed without dislodging the shell. The horse does not object to the artificial eye; indeed, the contrivance is a great boon to the animal, as it prevents the entrance of flies, dust, and other hurtful and annoying bodies to the disagreeable-looking cavity. Hertwig insists that the artificial eye must not be used until inflammation, suppuration, or granulation of the lost eye have disappeared.

In speaking of its application, he asserts that there was no difficulty whatever in fixing it in the orbit. With the thumb and first finger of the left hand the upper eyelid is raised, and the edge of the capsule (which has been previously wetted, and is held in the other hand) slipped in beneath it. Then the lower lid is depressed, and the inferior border of the horn placed behind it. A slight movement of the eyelid laterally and up and down, with the fingers, adjusts the piece in its proper place, and effaces any wrinkles which may have risen in the eyelids.

To remove the capsule, all that is required is merely to draw down the lower lid a little, to pass a thin probe behind the corresponding and now exposed margin, and by means of gentle leverage to lift the piece out.

In some instances, when the eye has been extirpated for a long time, the eyelids have become so contracted that the opening between them will not readily admit a capsule of the proper size. In such a case it is advisable to introduce a smaller-sized plate, leaving it in the cavity for a day or two; after which it will be found that a larger capsule can be inserted.

It is not absolutely necessary to remove the artificial eye every day. It may remain in its place for a week; but it is a good plan to have two capsules, as the air, moisture, and dust remove the polish from the outer convex surface, and to restore this requires a little time. It is done by means of a bit of cloth, whiting, oil, and hand-polishing. The spare one should always be slightly oiled before it is put away. With such management, an eye will last for nearly a year. The eye and eyelids should be well cleaned every time the capsule is about to be re-inserted.

Mr. Field's trial of the invention of the Berlin Veterinary professor is interesting, as it proves that it possesses real utility; inasmuch as it at least conceals what is only too often a very grave blemish, which in the majority of cases sends an otherwise valuable and often favourite horse to the cab or omnibus.

We may add that, since translating Hertwig's paper, we have been endeavouring to improve upon the material he uses, and in the direction indicated by Mr. Field. The question of expense, however, has not been overcome, and this is always a serious obstacle in matters equine. In the meantime, the horn artificial eyes are made and kept in stock by Messrs. Arnold and Sons, 35, West Smithfield, London; and we shall be glad if those members of the profession who have an opportunity of trying them, will favour us with their experience as Mr. Field has done, as well as any suggestions which may arise with regard to improvements.]

FOOT AND MOUTH DISEASE.

BY JAMES LAMBERT, M.R.C.V.S., 17TH LANCERS.

THIS malady is so alarmingly prevalent, that the question of veterinary inspection is attracting much attention. It is discussed by every one who takes an interest in our food and meat supply; and it is generally allowed that, as at present carried out, it possesses the confidence of neither stock-owners nor the public. Why is it a failure? The fact is, that it is attempted to get an important duty, requiring great integrity, judgment, firmness, and experience, done at a low and inadequate rate. If it is to be efficiently performed, the country

must be prepared to pay competent men for their services. An inspectorship must not be, as it now too often is, a refuge for the destitute, or a temporary convenience for the young and inexperienced veterinary surgeon, or indeed, in very many instances, for those who are not veterinary surgeons. When such is the case, how can there be confidence? Stockowners and farmers will do as they have done, and as they very often now do; they will conceal the existence of disease, to the great injury of their neighbours and others.

Veterinary surgery is a very much more lucrative profession than it was a few years ago—in fact, so much so, that the present pay of an inspectorship is looked upon as small indeed by any one who is not unsuccessful. Surely it can be arranged to have only capable and specially trained veterinary surgeons appointed. They can be got. It is a question of supply and demand; but they will not come forward, unless properly paid and guaranteed permanent employment. They must be adequately paid; they should also have a proper office for shelter and for keeping the necessary documents and books at the place where the inspection is usually made. Now in many instances that could be named, they have no office or shelter at all, but are obliged to hang about without any comfort or privacy; they cannot, therefore, keep their subordinates at a proper and, what is most necessary, a respectful distance. Cases are known to the writer, where they are almost obliged to associate with their subordinates, owing to the want of a private office; and it need not be said how objectionable that association must be from every point of view.

Can inspection generally be properly and efficiently carried out? In the opinion of those well qualified to judge, there is no doubt that it can; but it is a question of vigorous organization and money. Without adequate pay to the inspectors, and guaranteed permanent employment to those engaged, it will be a failure. Until it is established on a proper and systematic basis, there will be incompetency, dissatisfaction, complaints, and want of confidence. Reading the newspapers, those who do not look below the surface are very liable to think, and most people do so, that veterinary surgeons are to blame, or that capable in-

spectors cannot be obtained. Of course veterinary surgeons know that this is a most undeserved supposition, but the public are not aware of it. It is time they should be.

Inspection then is, as said above, a question of vigorous and intelligent organization and money. If they are not forthcoming, and especially the latter, it would be better for all concerned to drop the present unsatisfactory failure. But good and trustworthy inspectors can be obtained by the means above pointed out. The position of inspector must be one to be sought after and *valued* by him who holds it, and not considered as of little or, comparatively, of no value at all. The profession must be adequately paid and justly treated for its services; and the sooner this is recognised, the better it will be for all interested in this most important matter of veterinary inspection. Sooner or later it must be properly organised; for the diseases which render it necessary will always more or less exist, and will require trained skill for their prevention and cure. Veterinary inspection, therefore, must be permanent. If matters continue as at present, those concerned must be prepared to go on (as the old adage says) "losing the sheep for the sake of saving a halfpennyworth of tar." The amount of loss from preventible disease is enormous. As compared with that loss, the *necessary* and adequate remuneration, and the expense of the proper treatment and convenience of veterinary inspectors, would be a mere bagatelle.

A SUPPOSED CASE OF HYSTERIA.

BY A. INGLIS MACCALLUM, V.S., EDINBURGH.

I WAS sent for hurriedly on the afternoon of Tuesday, the 10th of August, to visit a very handsome chestnut mare, about fifteen hands high and six years old, the property of J. M., and of which the following is the history, so far as I could learn:—

The mare was bought at auction, by the owner, three weeks before, and had been used in a cart from that time daily, up to the Thursday previous to the above date, when she was left in the stable with an abrasion on the shoulder, caused by a badly fitting collar.

The shoulder being better, the owner sent one of his men with the mare to the saddler's to have a collar fitted. This man rode the mare along the street at a walking pace, and noticed nothing wrong until he was about three hundred yards from the stable, when she began to neigh at the passing horses, staggered a little, broke out in a profuse perspiration, and walked with a straddling gait. The man becoming frightened at her appearance, put her into a stable-yard close by, and sent for me.

On my arrival, I found the mare standing in the yard, with her legs apart, and the body covered with perspiration, which was falling to the ground in drops. The pulse was eighty-five and weak, the breathing very hurried, the nostrils dilated, and the Schneiderian membrane of a bright purple colour. The mouth was hot and moist, and a little dark-coloured blood trickled along the right side of the tongue. The legs and ears were warm, and the eyes staring and anxious. I had her moved slowly into a stable, and tried to back her into a stall, which movement she executed with difficulty, and walked with a straddling gait. I administered the following draught:—

R. Sp. Ammon. arom.
Eth. Sulph. a a . ℥ iss.
Aq. Camph. . . ℥ ix.

The body was clothed, and then the mare was put into a cool well-aired loose box, where she continued to neigh every three or four minutes, and lay down. I then left, but called again in two hours, and found her still lying, though breathing easier, with the pulse sixty and full, and the perspiration much diminished—indeed, almost gone. She, however, continued to neigh at the least movement as formerly, and the eye was wild and staring. I tried to get her up, but found she had not the use of her hind-legs.

I then had hot fomentations applied along the spine, and gave the following as a draught:—

R. Aloes Barb. . . ʒ vi.
P. Zingib . . . ʒ ij.
— Nux Vomic. . ʒ i.
Ext. Bellad. . . ʒ iss.
Aq. Ferv. . . . ℥ iv.
Aq. Font. . . . q. s.

Having administered the draught, I emptied the rectum and gave an injection of ℥ ij. Tinct. asafœtida and soft soap, which was kept for some time. I then gave orders for the fomentations to be continued, and every attention paid as to her being kept quiet. She was also to have a little gruel.

I visited the stable four hours afterwards, and found her standing. I learned that she had remained easy after I left, and got to her feet without any assistance about half-an-hour after the draught. She moved about a little, drawing the hind legs with difficulty, as if they were all of a piece. The pulse was then fifty, full and regular, the breathing natural, the mouth cool, and the extremities and ears warm. The fomentations were discontinued, warm clothing was put on, and then the mare was left for the night.

On August 11th the pulse was forty-eight, the breathing natural, the animal walked better, but was lame on the near hind-leg; there was difficulty in getting the limb forward, but no swelling or appearance of injury. The off leg was all right, and otherwise the mare was looking well.

I gave:—

R. P. Nux Vomic. ℥ i.
P. Zingib . . ℥ ij.
P. Gent. . . ℥ ss.
Aq. q.s. ft. Bolus.

and ordered a soft mash and a little grass.

In the evening the medicine had operated; the pulse was natural, and in every way the mare was improving. There was still a little lameness on the near hind-leg. The same diet was continued.

On August 12th, the mare was perfectly sound on her legs, but looked fatigued. I repeated the bolus of the previous day, and sent her home.

On visiting her two days afterwards, I found her continuing well. I saw her again to-day (August 28th), and found that she had remained in good health. I examined her carefully, and believed her to be perfectly recovered.

[In a private note the author of the above communication informs us that he had never before met with a similar case,

and it was only on reflection that he came to the conclusion that the mare had been affected with Hysteria. In all probability his conclusion is a correct one. He, however, does not allude to the state of the sexual organs, which generally are influenced by, or influence, this neurosis of the brain, particularly in dogs and cats. There are many instances on record of supposed Hysteria in the larger domesticated animals, and the majority of them appear to have been complicated with, or rather accompanied by, Nymphomania.

Zundel mentions that Guillaume had witnessed in a she-ass often in "heat," certain tetanic phenomena: closure of the jaws, grinding of the teeth, slowness and difficulty in mastication, and almost total inability to swallow. Eletti has described a somewhat similar case of a mare, in which, in addition to the tetanic symptoms and difficulty in mastication and deglutition, there was a certain degree of fury, with desire to bite. Analogous symptoms have been observed in cattle.

Instead of excitement, in some cases there are indications of paralysis or rigidity of the limbs, and locomotion is almost impossible; while not unfrequently there is partial or almost total loss of consciousness.

When Nymphomania is present, there is unmistakeable evidence of disturbance in the generative organs, with exaltation and morbid manifestations of the venereal appetite. This condition has been witnessed in the mare, cow, bitch, and cat, and in the first-named animal is not at all unfrequent.

In the human species, Hysteria and Nymphomania have been classed among the neuroses; but with animals we most commonly find them associated with disease of the uterus, and especially of the ovaries. Spinola was, however, of opinion that the lesions in the ovaries and the uterus are always consecutive, and that, primarily, Hysteria and Nymphomania were always neuroses.

Perhaps the most common cause in the production of these diseases is the forced abstention of animals from sexual intercourse during the period of œstrum, and particularly when to high-feeding, close hot dwellings, and other artificial conditions, is added insufficient exercise. It must be remarked, neverthe-

less, that Zangger, of Zurich, has found Nymphomania to be due, in the majority of cases in cattle, to the formation in the ovaries of a variable numb r of serous kysts, whose volume may reach from half-an-inch to two inches. These serous vesicles appear to produce the same kind of venereal excitement that the Graafian vesicles do when they are ripening at the time of œstrum. In the latter case, however, the venereal exaltation is only temporary; while in the former, in consequence of the kysts not rupturing like the follicles, the symptoms of "rutting" are not ephemeral, but permanent. Essmann, Prietsch, and others, have repeatedly proved the existence of these ovarian kysts in cows which are popularly known as "bullers." But Gœtz, Kœnig, and several other veterinarians, have found in the ovaries of these animals masses of tubercle of various sizes, and this discovery may satisfactorily account for the relative frequency of Hysteria and Nymphomania in phthisical cattle. Gerlach has seen a case of Nymphomania which was due to Cancer of the uterus; Cruzel has witnessed another, in which there were polypi in the vagina; Silvestri has remarked its presence in an animal which was suffering from an ecthymatous eruption on the vulva; and in bitches it has sometimes been found in connection with oxyurides in the vagina.

In addition to the morbid venereal excitement, which is the characteristic symptom, and particularly in Nymphomania, Zundel remarks that there is often loss of appetite, some degree of meteorism, exaggerated sensibility in the lumbar region, an abundant secretion of clear urine and vaginal mucosities, and very frequently the clitoris and labia of the vulva are tumefied. At last, in serious cases, there is dullness and prostration; the mare becomes immovable, and the cow wastes and ceases to give milk. At other times the excitement appears to increase, and convulsions set in; and Schneider states that he has often seen cattle perish in a few hours, in other cases in three days. An autopsy usually reveals hyperæmia of the genital organs, and hæmorrhage into the ovaries and broad ligaments.

The treatment of these conditions will, of course, altogether depend upon the exciting causes. In many instances, when there is no grave organic alteration, intercourse with the male

and consequent pregnancy, will effect a cure—for a time at least. If sterility exists, of course this natural remedy is of no avail.

Therapeutically, the treatment to be adopted will vary with the nature and seat of the disturbance, or, rather, with the opinion the veterinarian entertains with regard to these. Light diet, depletive remedies, plenty of exercise, or even severe work, are chiefly relied upon to bring about an amelioration in the symptoms. Rychner, who thought the disturbance was mainly due to a congestion in the abdominal region—to a local plethora—recommends saline medicines and rhubarb. Other authorities have prescribed cold water douches on the genital region and the loins, and immersion for four or five hours in very cold water, as in a river. Antispasmodic remedies may aid in soothing derangement in the nervous system; and with this object camphor in large doses (half-an-ounce to two ounces) with nitre, have been recommended for the mare by Hering. Asafœtida, as in Mr. MacCallum's case, has often proved useful. Opium has likewise been given with benefit, and Adam speaks highly in praise of morphia.

In cattle, when Hysteria or Nymphomania are due to ovarian kysts, Zangger is in favour of their obliteration. In order to effect this, the rectum ought to be thoroughly emptied, and the hand being introduced into it, is passed over the uterus until it reaches the ovaries, which are readily distinguished. The diseased ovary is larger than the healthy one, is irregular and lumpy on its surface, and more or less elastic. Moderate compression will cause rupture of the kysts. On the following day there may be increased excitement, with trifling fever; but with quiet and light diet these soon disappear. Gœtz avers that the tubercular masses in the ovaries may be dispelled in the same manner.

Castration has often been practised in the cow for Nymphomania, and Weber has successfully operated upon the mare.

We have appended these remarks at the request of our correspondent, and also because of the scanty reference to the subject of his communication in English veterinary literature.]

SPASMODIC "ROARING."

BY J. C. BROAD, M.R.C.V.S., LONDON.

IN the July, or first number of the *Veterinary Journal*, there is recorded a very interesting case of Spasmodic "Roaring," by my brother, Mr. T. D. Broad, of Bath.

It reminds me of a case occurring in my own practice rather more than three years ago, and a description of which may, like the case alluded to, afford a degree of interest to the readers of the journal:—

On May 31st, 1872, I was requested by Mr. M——, of this parish (Paddington), to go to Henley-on-Thames, for the purpose of examining a valuable cart-horse. On arriving at the station, I was met by the owner, and driven by him to a field about two miles distant, where the horse was at work. He was a fine, well-proportioned animal, standing seventeen hands high; he was eight years old. He was in harness with three other horses, attached to a machine possessing long teeth, or "tynes," for scarifying the land to a great depth; so I considered that I had a capital opportunity of, in the first place, testing the condition of the animal's respiratory organs. I commenced my examination by walking close by his side for several hundred yards, requesting the driver on several occasions to so regulate the team that the horse had to do much more than his ordinary share of drawing. This test elicited no abnormal sound whatever; indeed, everything so far could not have been more satisfactory. He was now detached from the team, and taken into a lane adjoining the field, where I completed my examination and passed him as sound; and as the price had been arranged, subject to my examination, he was taken back to the farm, thence to the railway, placed in a box, and sent to London. On the following morning (Saturday), at six o'clock, he was put to very light work, viz., drawing a water-cart in Hyde Park; and this he continued to perform in the most satisfactory manner, until about three o'clock in the afternoon, when he was noticed to be making a slight roaring noise. This noise increased in severity and to such a degree, that by four o'clock it attracted the attention of those who were walking and riding in the park. There-

upon the driver ceased working, and brought the horse direct to me, a distance of about three-quarters of a mile, previous to taking him home. A description of the occurrence given to me by the driver, and corroborated by the foreman placed over the men employed in the park, caused me no small amount of astonishment. I at once submitted the horse to another severe test, but without in the slightest degree exciting any peculiar noise. The case appeared a most singular and exceptional one. I sent the horse home, with instructions for him not to be sent out on the following Monday morning till I had another opportunity of examining him in harness. On the morning alluded to, he was harnessed and put to draw a large empty cart; and this he did for some time before my arrival. One of the wheels was subsequently locked: notwithstanding this, the animal continued to draw most willingly and in a perfectly satisfactory manner, though by the time I arrived he began to show the effects of his great exertion. As a finish, I had both wheels of the cart locked, which caused him to put out his strength to the very utmost. But despite the severe measures resorted to, the horse did not exhibit the faintest indication of roaring. He was put to heavy work for the remainder of the day, and this he performed most faultlessly. On the following morning he was employed at moderate work, and continued to do it as well as could possibly be desired, until about noon, when the "roaring" re-appeared as loud as it had been on the previous Saturday. My attention was again called to the case, and I found "roaring" present when he was either in or out of harness, and without the application of any severe test. His previous owner was at once communicated with upon the subject, and he replied by stating that the horse had been in his possession for about two years, and nothing of the kind had, to his knowledge, ever occurred; but that if Mr. M—— would put the horse on the train on the following morning, in the meantime writing to state what time he would arrive, in order that he might send to meet him, he would send a cheque in return for the full amount paid for the animal. This was fully complied with; and thus ended a transaction in a manner far more agreeable than cases of the kind are usually terminated.

CASES OF POISONING IN PIGS AND GEESE, SIMULATING THE SO-CALLED TYPHOID FEVER IN PIGS.

BY LANCELOT T. BARKER, M.R.C.V.S., SKELTON-IN-CLEVELAND.

ON the 27th of June last, I was sent for to see a sow that had been taken suddenly ill, belonging to Mr. A. Moscrop, of Dunsdale. On arrival, I found her in a *moribund* state. The respirations were greatly accelerated, with jerking at the flanks, and paraplegia; there were large dark purple patches on the skin and teats; the ears and mouth were cold, and of a black hue. The abdomen was tympanitic, and the fæcal and urinal discharges were suppressed: the temperature was $103\frac{2}{5}°$. On inquiry, I was informed that she appeared perfectly well the previous evening, took her food, and suckled the young pigs, which were five in number, and about three weeks old. Though the creature was sinking, Mr. M. requested that something might be given on trial. I accordingly administered an oleaginous aperient about three p.m., but she died in the evening.

On the 28th, I was again sent for, the messenger saying that two of the young pigs were dying; but they were dead when he got home—a distance of four miles. They were quite lively about two hours previously, and took their breakfast, which consisted of wholesome cows' milk; the diet of the mother being milk and meal, mixed with water from a stream into which water from an ironstone mine and sewage from cottages are immediately emptied. The sow and young ones were confined in a large loose box and fold-yard.

I may add that I cautioned Mr. M. some time previously with regard to the danger to his cattle by the pollution of the stream, which was then very low, it being droughty weather, and a sediment of mineral and sewage matter forming a thick incrustation upon the sides of the stream: telling him that if any poisonous matter was present, it might, by the action of the dry atmosphere, be rendered soluble in an influx of fresh rain-water, which would inevitably favour its deleterious or toxic effects upon the animals that partook of it.

The above hypothesis appeared to be correct; as immediately after the rain came the disease appeared amongst the pigs and geese; four geese dying, some beside the stream, whilst others got nearly home—a distance of 150 yards. The three remaining young pigs were quite lively when I got there on the 28th, about 10.30 a.m., but during the time I was making a *post-mortem* examination of those dead, two of the three were observed to stagger and lose their equilibrium posteriorly. Dark purple patches and spots broke out all over the body, as in those dead, and in a very few minutes paralysis of the hinder extremities was complete. I ordered

R. Brandy . . . . . ℥j.
Soda Bicarb. . . . 3 grs.
Ol. Ricini. . . . . ℥j.

to be given to each; but the two died within four hours.

The *post-mortem* examination in all the cases revealed abrasion of the mucous membrane of the stomach, with intense Hyperæmia. There were two or three deep excavated ulcerations, about one inch by half-an-inch in diameter, and more longitudinal ulcerations were present in the duodenum, nearly perforating the viscus. The cæcum, colon, and ileum were distended with gas. The abdominal cavity was full of serosity, and the fat cells of the omentum were replaced by water. The pigs, when alive, looked well-nourished, plump, and fat; but when dead, the fat was replaced by water, which had given them a rotund appearance. Water was found in all the cavities of the body, and the red blood-corpuscles remaining in the bloodvessels seemed to be in a clear, transparent state, showing that that fluid was altered. The gauze-like appearance and transparent meshwork of the water-containing omentum indicated that mal-assimilation, or a morbid appropriation of the fats, had become gradually established in a chronic form, and only required an exciting cause to immediately produce death. The only conclusion that I could arrive at on this point was, that the exciting cause in the young ones was the weaning, on account of the mother's death the day before; they, in my opinion, being poisoned indirectly by her milk, on which they had previously subsisted.

I may say that many things appeared mysterious; but the

manner in which the geese became so affected, and the *post-mortem* appearance, viz., Hyperæmia around excavated ulcers in the gizzard, extending through the strong cuticular into the muscular coats, made it, in my opinion, proof positive that some corrosive irritant poison had been taken both by the pigs and geese. This poison I considered to be either mineral acids or chloride of lime, which had been largely used to disinfect the cesspools, and which, with the admixture of the sewage matter, tended to produce the typhoid change. The purple patches and spots were also present on the skin of the geese when plucked, and the internal lesions were exactly the same as in the pigs, except that fat was present.

I had a bottle filled with water from the stream at the time, but, unfortunately, on riding home, the cork came out, and most of it was spilled. In the remainder, however, I found sulphide of iron and a large quantity of organic matter; but I was then unable to proceed any further with the analysis, and having no more spare time to devote to the investigation, I unfortunately allowed the opportunity to escape me. I am, nevertheless, under the impression that either the sulphides of iron and chlorides of lime, coming in contact, had produced higher salts or acids, and caused the gastro-enteritic erosions, or that, through the organic matter from the sewage, the alimentary and sanguiferous systems had been deranged.

VETERINARY OBSTETRICY.

BY WILLIAM A. COX, M.R.C.V.S., ASHBOURNE.

THE district in which I reside, and where I have been in extensive practice for a number of years, is devoted to dairying and breeding cattle; and difficult cases of parturition are of such frequent occurrence, that they have formed a considerable part of my professional duty.

This subject of Obstetrics is one on which there is a great dearth of information; nor is there any sterling work of reference or authority which enters into the major part of the presentations seen. But it would be a great omission on my

part not to mention the names of Professor Simonds and Mr. Cartwright, of Whitchurch, as contributors of valuable information upon the subject. Professor Simonds' essay is able and lucid, but there are numerous forms that he does not mention; nor could he have done so, unless he had extended it to a much greater length.

But it is to the communications of Mr. Cartwright that we are most largely indebted for our practical knowledge. He does not theorize, but states the cases, the forms of presentation, and the methods of delivery; and his great practical knowledge of the subject enables him to comment thereon, and to advise and suggest measures in those and other cases that would not occur to individuals less thoroughly acquainted with it than himself. It is extremely unfortunate for the juniors of the profession that these writings are spread throughout the *Veterinarian* for a number of years, and that they are not obtainable by them except through fortuitous circumstances.

Whenever necessary, I shall refer to the communications of both these gentlemen in illustrating the mode of extraction and other features connected with the various positions the fœtus assumes. I shall divest the subject of unnecessary or over-elaborate technicalities, and the divisions will be as simple and easily understood as it is possible to make them.

Parturition, or the act of bringing forth the young, is an easy and simple operation *in loquitor*, or in a class-room; and I have often been amused to hear some new-fledged members of the profession, totally unacquainted with practical knowledge upon the subject, explain the methods by which the most difficult presentations could be easily dealt with. Those who have toiled at such tasks know the weight of them, and would say that between the theory and the practice there exists a wide and immeasurable difference.

Repetitions of the most accurate description, with an exhibition of the various instruments, and instructions as to their use, will fail to convey as much knowledge as would be gained from a single case. It is in this branch of our profession that a reserve of practical knowledge is invaluable; it enables the operator to act with a promptitude and vigour that is so impera-

tively demanded, and with that confidence in one's own judgment which is most frequently the concomitant of success.

I do not object to high-class education for the profession, but I do affirm that it is frequently disgraced—in a professional point of view—by young men fresh from school or a preparatory college entering our veterinary schools, where they exhibit their intellectual superiority by taking first-class honours, then going, as soon as qualified, into practice, and undertaking all the multitudinous duties connected with it.

In a case of this kind—as men of rectitude—they would almost fear to make an examination; they would be confused as to the method to be adopted, and their half-hearted attempts would either result in total failure, or in some injury accruing to the patient. I have known instances in which well-educated, gentlemanly members of the profession, who have graduated with *éclat*, but were void of practical knowledge, have been foiled in their attempts to extract a fœtus—and a simple case, too—and the herdman, not professing special aptitude, has been successful.

I must here remark, that in almost all breeding districts there are men who, having assisted, as tractile agents in a few cases, venture to attempt all, however difficult. As a rule, these are a nuisance, as they persist in their attempts until they imagine they have made it impossible for any assistance to be of service. They are known by the local term of "good hands" at such things.

Speaking of practical knowledge, I would venture to call attention to the Inaugural Address delivered before the Midland Counties Veterinary Medical Association at Stafford, on the 1st June, 1875, by the President, Thomas Greaves, Esq., Manchester. When speaking of veterinary education, and stating that he is in favour of it, he asks how a young man can be a useful veterinary surgeon who, up to the period of his entering college, has been engaged in scholastic duties, when the curriculum extends only over two sessions? He says, "His ideas of disease may be all scientific, but when reduced to practice, they will often be found producing confusion and disorder;" but his entire observations are so clearly to the point, that they should be transcribed in letters of gold.

During my professional career I have had numerous pupils, and I say, without presumption, that all of them were successful operators in this branch, either in manual dexterity, embryotomy, or embryulcia; besides having acquired, from the frequency of these cases, and the success that had attended them, a *sang-froid* that told the spectator that they were not novices at this work. Some were more expert than others; and it will be found that one operator may possess three important physical advantages over another;—firstly, a *long arm*—this is the most decided advantage, and often saves a great amount of labour, as, however skilful a man may be, unless he can reach the feet and the nose of a fœtus, he must perforce, by drawing them nearer, run the risk of injuring the walls of the uterus; secondly, a *strong arm*—and by this I do not by any means intend an arm which is thick and fat, but one which is muscular and well developed. The third is a quality few Englishmen are short of, but to obtain a name for success in this particular branch of surgery, it must be possessed in a more than ordinary degree; it is *endurance*—not simply "pluck," as it is termed, but a tenacity of purpose that will enable the operator to try again and again, after successive failures, until he succeed. Those experienced know that they have failed time after time, until they had almost confessed themselves beaten; when another attempt has, in a few minutes—sometimes in a few seconds—effected what repeated and long-continued efforts had failed to do.

The labour varies in different animals.

In the *Mare* these operations are the most difficult, as well as most dangerous, both to the operator and patient. The great strength and resolute determination mares exhibit in their throes, exceeds the belief of any one ignorant of the matter. Some cast themselves with violence to the ground, even along it; others kick and plunge as if suddenly gone mad; and in almost every case there is great danger to the operator. In others, vessels are ruptured—in some instances in the abdomen, or even in the chest—the capillary structure being broken up. I well remember a case belonging to a Mr. Beard, of Kuneton. The animal was the most valuable within many miles, and she

was already the dam of several entire horses. She was seized with labour pains, and as she made no satisfactory progress, my assistance was quickly sought. I found that the head and fore-legs were presented, but they were coming through the inferior wall of the vagina. Exploration showed the vaginal passage on the far side of the head clearly defined, but in a few inches it came to an abrupt termination. Patient search enabled me to find a small rugose opening to the right side, but it was so constricted in diameter that I could only introduce two of my fingers. On inquiry I found that the mare had some short time previous—a few weeks before—an attack of Colic, and several times rolled over from side to side. I diagnosed the case as twisted neck of the uterus, and rupture of the floor of that organ, as well as of the floor of the vagina—a *double rupture.* This is palpable evidence of the immense power exercised by these animals when "in extremity;" that the fœtus should be forced through its own investing membranes, and the wall of the uterus backwards through the vagina, and actually presented externally, is remarkable. The condition of the mare gave no hope of recovery; she died in a couple of hours, and a *post-mortem* examination showed a *double twist* of the cervix uteri. Some cases occur, in which, after an easy delivery, and without showing much evidence of pain or illness—often none—the animal dies within an hour or two of the conclusion of the operation. These accidents have a tendency to injure one's reputation, especially if he is a beginner; but investigation will discover the uterus uninjured, and rupture of some vessel external to it. These are of more frequent occurrence than is imagined.

There is another special feature attending these cases in the mare, and that is the very great length of the extremities of the fœtus, compared with those of other animals. This is especially noticable in *breech* presentations, but it will be more particularly mentioned when speaking of that position.

In the *Cow*, the *pains* are not dangerously violent, but are often sufficient to interfere with proper manipulation; while the comparatively diminished calibre of the passage allows of a great and persistent pressure on the arm and hand, sufficient to cause in a short time a numbness and swelling.

In regard to this animal, there is another feature that protracts and retards our efforts; this is the tendency the cow has, after being in labour some time, to obstinately remain in the recumbent position.

In the *Sheep*, the operator has to contend principally with the small size of the vaginal passage and of the os uteri. Compared with the strength of the animal, the expulsive efforts are strong, but not sufficient to cause inconvenience or annoyance to the operator.

In the *Sow* and *Bitch*, unless they are of the largest breeds, we are unable to explore manually, except by the index finger. This remark applies to all *Cats*.

In young animals the *gestative period* is often shortened—almost invariably at the first conception—by a length of time varying from two or three to ten days, or even a fortnight. In those of mature or advanced age, this period is exceeded,—in some animals to a considerable extent.

I have in my case-book numerous instances of this kind, the date of the last copulation being accurately kept; nor in these instances could any subsequent connection have taken place between the sexes.

The maximum prolonged time in cattle I find was twenty-three days, the minimum three days. These are extracted from my case-book; and of over one hundred instances, there are some at five, eight, eleven, thirteen, fifteen, sixteen, and twenty days; the mean time exceeded being twelve days.

It is well known that the young, when this delay has occurred, are frequently of the male sex.

In the *Mare*, gestation is often extended; in one instance it was fifty-three weeks and three days. It appears to be an ordinary occurrence for it to be ten or twelve days beyond the recognized time.

The size of the fœtus depends considerably upon the condition of the parent, and the kind of food she has lived upon. Fat animals, and those atrophied from the continuous use of food of a poor nature, or insufficient in quantity, bring forth a small fœtus. Where the debility is the result of pregnancy, and food has been given of a nutritious character and in sufficiency during that

period, the fœtus will be disproportionately large, the extra nutriment having been diverted to its growth and nourishment. Green food, or "depasturing," causes the fœtus *in utero* to grow rapidly and attain a great size; but nature adjusts this by giving with such diet greater relaxation of the tissues of the dam, and an increase of the placental fluids to lubricate and assist at delivery.

Diagnosis of Pregnancy and of the Period of Parturition.—Questions in reference to these are often put to the practitioner, and at the early period of gestation will prove a puzzle even to the most experienced.

At an advanced period, in the *Mare*, *Sheep*, *Sow*, and *Bitch*, the size of the abdomen will often assist us in forming an opinion; in the *Cow* especially, if fat, this is not so certain an indication. It is a custom with cattle-men to push the flank inward with the knuckles, allowing it to return half-way, when the fœtus will be discovered. This is called "touching the calf;" but it is acquired only by frequent practice, and for a novice to attempt it, and to give a decision thereupon, would be to render himself ridiculous.

During the earlier period in the *Mare*, various methods are adopted. Some mares are kept without water for a length of time until very thirsty, and when allowed to drink, the flank is attentively watched; with others, water is poured into the ear. In both cases the fœtus is expected to move; but they are not sure tests. The introduction of the arm into the rectum, and after emptying it of its contents, pressing down towards the uterus will, it is said, demonstrate the presence of the fœtus, if it be there. Doubtless it succeeds in some cases, and will bring on premature labour. Proper auscultation is prevented by the rumbling sound of the intestines, and cannot be said to be trustworthy.

In the *Sheep*, *Sow*, *Bitch*, and *Cat*, pregnancy is discoverable in the size of the abdomen, and by succussion.

As a rule, the periodic discharges of œstrum cease; though there are notable exceptions to this in *Mares*, *Cows*, and *Bitches*. I have never observed it in other animals. These first-named have been "in use" subsequent to impregnation; they have

submitted to the male, and copulation has taken place without any untoward results. These "periods" have occurred in some throughout the entire time of pregnancy.

Before proceeding with the main body of the subject, it will be advisable to mention *False pains.* These do not occur in the *Mare,* but they are not uncommon in *Cattle* pregnant for the first time, nor in *Sheep,* without reference to age or prior conceptions. Obstructions in the intestines, derangement of the digestive system, and rapid travelling—especially the latter—are the exciting causes.

Occasionally they are so violent that folds of the vagina are everted, and in some instances the rectum is forced down. Considerable judgment is required in these cases, as the introduction of the arm into the vagina would aggravate the symptoms, and produce premature labour.

There is a considerable difference observable in these "pains" and those of *true parturition.* There is an absence of abdominal contraction, and the haunch and pelvic cavity seem the fixed point the muscles act upon.

The rectum might be explored; as I remember an instance in which these symptoms were presented, and it was found that some malicious person had passed a jagged stick into the intestine, lacerating it to a fearful extent.

Sheep, when heavy in lamb, frequently evert a doubled fold of the vagina. This occurs when they are in a recumbent position, and in some animals it is of such frequent occurrence, as to cause excoriation and ulceration. It is called—though erroneously—"putting down the reed, or bed," before lambing.

It is a common custom to return the partially prolapsed vagina, and stitch the wool across the vulva; and some use a truss similar in shape to that used for cattle. But both methods frequently fail. The use of a ring-shaped pessary is decidedly the best, and is generally effectual.

Premature Labour.—This is separate and distinct from the preceding condition, and from Abortion. It is labour brought on by some actively exciting cause at a late period of gestation, and without any preparation, the fœtus being frequently alive

up to the commencement of the pains. It is caused by nervous excitement, undue exertion, acute disease, injuries, and the action of powerful medicinal agents.

Singular as it may appear, nervous excitement more frequently determines these cases in the *Cow* than in the *Mare*. In my case-book, numerous instances are recorded,—several in one herd, from a pack of hounds passing and repassing through a field in which pregnant cows were at pasture.

Violent or excessive exertion is a more frequent cause in the *Mare*. Cattle, if hurried when travelling, towards the period of parturition, suffer in the same manner.

Disease, especially where the nervous system is considerably involved, severe injuries, or sudden fright, severally induce it. Fortunately for us, the brute creation, when pregnant, withstand the action of medicine better than the human subject; but excessive and repeated purgation, or the use of powerful stimulants, have, in some instances, produced abortion.

(*To be continued.*)

EASY REMOVAL OF OVERGROWN TEETH.

BY J. C. HINGSTON, VETERINARY STUDENT, LEEDS.

MR. FERGUSON, M.R.C.V.S., Leeds, having related to me a case in which the last molar tooth was considerably overgrown, I advised him to procure a pair of Thompson's tooth shears, which I had seen used with excellent effect during the time I was assisting him with his practice in Sheffield. The instrument was procured, and the animal—a horse belonging to Messrs. Boyle, Leeds—was cast, and the portion of tooth satisfactorily removed.

About a fortnight afterwards, Mr. Ferguson requested me to assist him in removing from a horse, the property of the Leeds Tramways Company, four portions of overgrown teeth: three from the lower molars and one from the upper. The animal was turned round in the stall, and with the aid of a screw "balling-iron"—which was also used in the former case—the

pieces were excised without any pain to the horse or trouble to the operator. Both horses masticated hay perfectly in a few days.

I think Mr. Thompson deserves the thanks of the professsion for his valuable invention.

[Mr. Hingston kindly forwarded to the Brown Institution the excised portions of molar teeth above alluded to, and Professor Duguid gives us the following report: Specimens of overgrown molar teeth sent by Mr. Hingston. These were very large, and in four of the five specimens sent, the whole top of the tooth was cut evenly off. They are certainly very valuable evidence as to the utility and efficiency of the instrument used for their removal.

No. 1.	Last molar tooth of Mr. Boyle's horse:	
	Transverse Measurement	$\frac{3}{4}$ inch
	Antero-posterior ,, ...	$1\frac{5}{16}$,,
No. 2.	Transverse ,, ...	$\frac{3}{4}$,,
	Antero-posterior ,, ...	$1\frac{5}{16}$,,
No. 3.	Transverse ,, ...	$\frac{3}{4}$,,
	Antero-posterior ,, ...	$1\frac{5}{16}$,,
No. 4.	Transverse ,, ...	$\frac{3}{4}$,,
	Antero-posterior ,, ...	$1\frac{5}{16}$,,
No. 5.	Transverse ,, ...	$\frac{14}{16}$,,
	Antero-posterior ,, ...	$1\frac{5}{16}$,,]

A FATAL ERUPTIVE FEVER IN PIGS.

TOWARDS the end of last August, we were informed that a very fatal outbreak of "Typhoid Fever" in pigs had occurred on a farmstead at Higham, near Gravesend, Kent. On our expressing a desire to examine the carcase of one of the diseased animals, Mr. Martin, Veterinary Surgeon, Rochester, who had been called in to attend the sick creatures, kindly acceded to our request, and procured us the body of a sucking-pig which had succumbed only a few hours previously.

At the first glance, it was evident that the animal had not died from Typhoid Fever, but from the effects of an eruptive fever, which we had not before witnessed in the porcine species,

and of which we have not yet been able to find any exact description, in English veterinary literature, at least. The most striking characteristic of the malady was the cutaneous eruption. From the snout to the tail and the hoofs, the body was almost universally covered with moist crusts covering discoloured, or rather inflamed-looking, patches. These crusts were very easily removed, and the skin beneath was in a softened, "oozey" condition; more especially behind the ears and between the thighs, where the patches were large, and where the integument appeared to be in a semi-gangrenous state. This eruption was most striking, as we have said before, and at once precluded the notion of Typhoid Fever having been present. The subcutaneous connective-tissue was intensely hyperæmic at the points corresponding to the eruption, but beyond this the unaided eye could not discover any other alteration externally. The nostrils were filled with a muco-purulent viscid fluid which quite obstructed their openings, and the visible mucous membranes were congested. In the abdominal cavity, the mesentery was noted as intensely congested; and the kidneys themselves, as well as their surrounding tissues, were gorged with blood. The bladder was greatly distended with urine of a greenish-yellow colour, and rendered turbid or grumous by minute white particles of what appeared to be shreds of renal tissue. The large intestines were filled with lumpy somewhat hardened fæces, the small intestines contained soft matter; but neither in these nor in the stomach were any noteworthy alterations observable. The thoracic organs were healthy; the lungs only offered hypostatic congestion, and the air-passages were healthy, with the exception of a small ruptured vesicle on each vocal cord.

As my facilities for making a more extended inquiry into the pathology of the affection were limited by other business, Mr. Martin obligingly undertook to forward two living, but diseased, pigs to the Brown Institution. These were sent immediately afterwards, but one was dead on arrival; the other lived for thirty-six hours. They were examined by Dr. Burdon Sanderson and Professor Duguid, and the latter communicates the following notes of the autopsies:—

The mouth, tongue, larynx, and pharynx were healthy in

both pigs, as were the lungs and pleuræ. The peritoneum was healthy and perfectly smooth, but its sac contained a trace of fluid. In both cases a large hæmorrhagic patch existed in the stomach, but there did not appear to be any tendency to ulceration; the epithelium was still intact, the texture of the membrane being simply infiltrated with extravasated blood. The mesenteric vessels were distended with blood, but there was no extravasation. The whole of the small intestines showed very little, if any, deviation from the healthy condition; the mucous membrane was perfect throughout; Peyer's patches seemed pale and rather prominent; the other portions of the membrane presented merely distended bloodvessels—nothing else.

In both animals the large intestine was full of very solid fæcal matter, and in the one that lived for thirty-six hours after arrival there was a little congestion of the cæcum.

The kidneys were pale and soft; when cut open, a small quantity of urine from the uriniferous tubules was collected in the pelvis of the gland; this contained dirty-looking flakes, which, when examined under the microscope, were found to consist of masses of epithelial cells, and here and there very perfect casts of the tubules were noticed. The urine contained in the bladder was very turbid and milky; it contained a large quantity of phosphates, and when treated with nitric acid it cleared up, but afterwards on being heated it deposited albuminous flakes. A drop of the urine from the bladder, when examimed microscopically, showed masses of epithelial cells and casts of the tubules.

Two kidneys and several portions of the skin are now in process of hardening for microscopical sections. When these have been examined, we shall report the result. It may be mentioned in the meantime, that the condition of the kidneys was not at all unlike that presented by these organs in Scarlatina, and had there been any implication of the mucous membranes, one might have been inclined to look upon the affection as more allied to that disease than any other.

There was certainly not the slightest resemblance between the lesions noted in the three pigs and those of human Typhoid.

The outbreak occurred on one farm, and in three sties not far

apart from each other, occupied by breeding sows and their progeny. The latter numbered thirty-two, and all perished in a remarkably short time. The litters were, I believe, nearly of the same age, and the sows had been affected, but recovered.

The symptoms were those of fever, sickness, and loss of appetite. The young creatures, when attacked, huddled together apart from the mother, the skin became discoloured in discrete patches, vesicles appeared upon these, or the skin began to exude a "sweaty" fluid, which, on the portions that were not in contact with other parts, formed crusts.

The disease is believed to be contagious; and a sow which was about to litter having been moved to another part of the farm where the disease had not been seen, escaped a visitation. The young have also remained unaffected. No cause could be ascribed for the appearance of the malady, the sties being kept very clean and the animals fed as usual.

The disease had not been witnessed in the neighbourhood before.

We shall take every opportunity of acquiring information with regard to it, and at an early period we will make some remarks with regard to the so-called "Typhoid" of pigs.

It is strange that the diseases of this animal have not met with more attention, and that such destructive scourges are allowed to carry off thousands of these useful food-producers every year, without any attempt being made to ascertain at least their nature and causes. Our professional friends can largely assist in repairing this neglect; and we shall feel more than grateful if diseased animals, dead or alive, and especially those suffering from "Typhoid," are sent for pathological study to the Brown Institution, Wandsworth Road, London.

Editorial.

THE COLLEGE EDUCATION OF THE VETERINARY STUDENT.

IN the last number of this journal, we deemed it to be our duty to allude to one of the most important subjects connected with the department of medical science which it is our anxiety to fitly represent, and our privilege to aid in promoting; we refer to the preliminary or preparatory education of those who aspire to become members of the Royal College of Veterinary Surgeons. We then pointed out the incalculable amount of injury that had been directly inflicted upon the progress of veterinary medicine and the position of the veterinary profession, and indirectly on the public interests, by the total absence of any educational test before admission to the veterinary schools. We also commented strongly, but not more so than the occasion warranted, we believe, upon the utter insufficiency, and consequently inefficacy, of the preliminary examination that has been adopted within only a very small number of years; and we insisted, as urgently as we could, upon the necessity of instituting such an examination as shall be a guarantee that the candidates who present themselves for admission to the schools shall not only be able to comprehend the language in which they are taught, and can enter society as respectably educated members, but that their intellect has been trained to reason and observe. We fixed the standard of education higher than perhaps some may think necessary, at least to commence with; but, we still think, not a whit higher than is absolutely demanded now-a-days, if we are to lay any claim to being progressive. We are beaten beyond distance in this respect by other branches of science which we should be immeasurably a-head of, merely because we think that the most trivial amount of education possible is sufficient. Not only this, but the profession has no guarantee that even this smattering of the three R's is possessed by those who enter the schools; nor is there the faintest proof that the preliminary examination is even what it pretends to be. There is reason to fear that it is not;

and we think it is high time that steps were devised, not only for ensuring uniformity and certainty in this direction, but that the schools should be relieved from the responsibility and trouble of these all-important examinations, and that candidates should be prepared to undergo such tests as will prove that they know something of classical, physical, and biological subjects, in addition to their English education.

If the standard of general education has been very low in the veterinary profession, so far as tests are concerned, the professional education has been as meagre and as insufficient. This has been due to the character of the schools, and to the neglect of veterinary science by the country. For many years after the first school was commenced by a few subscribers, the course of study did not extend beyond *one session of six months!* It was imagined that a great advance was made when a period of two sessions, of little more than five months each, was the rule. Within the last two or three years a summer session of about six weeks has been added; so that, altogether, the period of attendance at college now amounts to about *twelve months!*

Though the period has been lengthened, the subjects advertised as taught have certainly been trebled; consequently, it is questionable whether any real change has been effected beyond the introduction of a larger number of subjects to be studied in a comparatively shorter space of time. From the advertisement of the oldest school (which we do not select invidiously, but simply because it is the principal school of the four), the public is given to believe that clinical and pathological lectures and demonstrations, as well as general instruction, are given on the pathology of the horse and other domesticated animals, including epizoötics, parasites, and parasitic diseases; also on anatomy, physiology, histology, chemistry—general and practical, materia medica, toxicology, botany, therapeutics, and pharmacy; hospital practice, obstetrics, operative surgery, the principles and practice of shoeing, etc. Now we would ask any one who is acquainted with tuition and with these particular subjects, how much of them, or, indeed, how many of them, can be taught in the brief period of twelve months? Take a senior wrangler of Oxford or Cambridge, whose capabilities for acquiring knowledge have

been trained to the highest possible degree of perfection, and set him to the task of attempting to acquire even an elementary notion of this crowd of subjects in the allotted time, and he would give it up in despair. How, then, must it be with the unfortunate youths who barely can gain admission to the schools, through the almost childish preliminary examination they may have to undergo?

And yet it must be admitted that all of these subjects are essential in the education of the veterinary surgeon, and should be well and fully taught. If they are not thoroughly taught, or if they are not taught at all, then the public should not be misled by an inflated or unsubstantial syllabus. But we maintain that it is absolutely impossible to give the veterinary student anything like a satisfactory notion of the many subjects enumerated, —not including the *et ceteræ*,—which may be of use to him in after life. Only fancy a student who may know absolutely nothing of the profession before entering one of the schools, and utterly ignorant of the physical and collateral sciences, and of the language of science, being expected to "get-up" these very dissimilar and very difficult subjects in a year at college. The idea is absurd, and only two things can happen: either that the subjects indicated are extremely superficially taught, and the graduate is a mere sciolist, fit to pass a few minutes' oral examination, but unfit to practise his profession with advantage to himself or his employers; or only a small number of them can be fairly inculcated. As for practical knowledge, and instruction in handling the different species of animals which come under the care of the veterinary surgeon, and in manipulation in operations—invaluable instruction it is, this, we fear, cannot be expected unless the student has previously spent some time with a good practitioner.

The fact is, that the time deemed necessary for the professional education of the veterinary student in this country brings ridicule upon us, and not without good reason. It also works the greatest possible harm to ourselves; as every year graduates are sent out from our schools, who, if they at once attempt to practise, are certain to give evidence to the world of how little they have been taught, and how unfit they are to be entrusted

with the care of valuable animals. We hear these complaints on every side, and the period of the Cattle-plague invasion gave us ample proofs that the public had no confidence in the professional knowledge of the veterinary surgeon. One of these proofs may be found in the composition of the Royal Commission appointed to inquire into that disease. Not only this, but we acknowledge our own incompetency in many ways. For instance, if an International Veterinary Congress is to be held for the discussion of purely professional questions—a congress to which other countries send veterinary representatives—we recommend our Government that a member of the sister branch of medicine be deputed for this duty. And again in our schools, the present system of instruction is insufficient to train teachers; this we are compelled to admit by appealing to the sister branch for lecturers on subjects with which we should be best acquainted. And it is the same with our examining boards. How very different all this to the profession on the Continent, and how very humiliating to us after all the years that have elapsed since it was attempted to acclimatise veterinary science in this country!

Perhaps, however, the most pernicious result of the unsatisfactory and superficial manner in which our science is taught is the effect upon the student himself. What is lightly acquired is generally as lightly valued. Hence the graduate, from the hurried manner in which the essentials of his professional knowledge must be run over—some of them, perhaps, never alluded to—is only too frequently made to believe that the cultivation of his science is of very little moment, and, indeed, that it is somewhat related to the rule of thumb. He is therefore content to be satisfied with the modicum of instruction he may chance to remember, to shun reading, writing, or research, and to consider himself a "practical" man. And all this because he has had no other example to follow, and has not been taught, nor had time to realise the dignity or the value of, nor the work yet to be accomplished in, veterinary science.

The two most pressing requirements of the profession at the present time, and without which no improvement can be effected in any direction, are a higher and uniform general educational test previous to admission to the veterinary schools (this test

being applied under the direction of the Royal College of Veterinary Surgeons), and a greatly extended period of study, or, at any rate, a decrease of at least one-half in the number of subjects taught. If the Royal College wishes to earn the gratitude of the profession, and confer a benefit upon the country, it must act energetically and promptly in doing its duty in this matter. We are certain that it will have the hearty support of those of the profession whose support is worth having.

THE ARCTIC EXPEDITION AND THE SLEDGE DOGS OF GREENLAND.

THE very latest intelligence from the Arctic Expedition which recently left our shores to reach, let us hope, the North Pole, informs us that it had got as far as North Greenland, and that the Danish Government had thoughtfully arranged for the supply of Esquimaux, or rather Greenland dogs for sledging purposes, twenty-five of these useful animals having been ready for embarkation at Godhaven, Disco, and twenty at Ritenbenk, according to one report. The former were taken on board the Alert—the pioneer ship, with an Esquimaux dog-driver and his rayah.

A private letter from Copenhagen mentions that only twenty sledge dogs were got on board at Disco, and it was believed that twenty more could be mustered at Ritenbenk, which is another settlement further up Disco Bay, near the mouth of the Waigat Strait. About sixty in all are required, and it is hoped that at either Proven or Upernavik (72° 43″ north latitude) this complement may be made up. We are told, however, that this will necessitate great exertions on the part of the Danish officers, and entail no little privation on the poor Esquimaux, as the disease which has for some years been decimating the dogs all along the Greenland coast, from Smith's Sound to Disco Bay, is still raging. In our treatise on "Rabies and Hydrophobia," and also in the *Geographical Magazine* for last February, we have drawn attention to this malady, which has almost exterminated the dogs of Greenland, and was at last accounts decimating those of Kamschatka. The symptoms closely resemble those of Rabies; though it is asserted that people bitten by the diseased animals do not suffer from Hydrophobia. It has been recognised as exceedingly contagious, and so much apprehension does it excite on this account, that no sooner does a dog manifest symptoms of its presence than it is killed. Our paper in the *Geographical Magazine* was written with the view of warning those who had the control of the arrangements connected with the Expedition, against taking sledge-teams from North Greenland, though, as the malady had not then appeared in South Greenland, they might have been obtained in that region. We then said, "It is now a matter for serious

consideration whether our own exploring expedition should not obtain its canine quadrupeds from other regions than Greenland, should sledge-work be anticipated. To say nothing of the danger incurred from the presence of Rabies among the dog-teams, the loss of the animals might prove a source of great embarrassment to the Expedition at a critical moment, as it did in Kane's and Hayes' explorations. Whatever he determined upon, however, it is to be hoped that, if the opportunity offers, careful inquiries will be made by our Expedition with regard to this malady among the Greenland dogs, especially with regard to its nature, the amount of damage it has caused, and whether it has been communicated to the human species. Comparative pathology, no less than geographical, have a more or less pressing interest in a subject of this kind."

Notwithstanding our timely warning, it appears that the sledge-dogs are drawn from the infected districts, and the Copenhagen correspondent with much reason says that "it is feared that this Expedition, like all previous ones to Smith's Sound, will lose many of its teams from this mysterious malady."

This risk might well have been avoided, for Lieutenant Payer's teams, obtained in Vienna, and not allowed to come in contact with the native dogs, escaped the contagion and did excellent service. Not so those of Hayes and Kane, purchased in Greenland, which perished, and brought disaster upon the explorers.

We incidentally obtain some confirmation, in the letter above alluded to, of the prediction we made as to the fate of the Esquimaux when their dogs had died, for it is stated that there is now only a handful of these people living in Smith's Sound.

A TEXT-BOOK ON VETERINARY PHYSIOLOGY.

We are extremely gratified to learn that Dr. McKendrick, F.R.S.E., Professor of Physiology at the Edinburgh Veterinary College, is engaged in preparing a text-book on the "Physiology of the Domestic Animals." The absence of such a work in the English language has been seriously felt for many years, and veterinary students, as well as veterinary surgeons, have been compelled to borrow their notions of comparative physiology from books treating exclusively of human physiology. While every country except our own has had excellent works on the subject—for instance, Müller's "Lehrbuch der Physiologie der Haussaugethiere" in Austria, Gurlt's "Lehrbuch der Vergleichenden Physiologie der Haussaugethiere" in Prussia, and Colin's "Traité de Physiologie Comparée des Animaux Domestiques" in France—those who could not read in the different foreign languages have been deprived of the assistance which a good treatise of this kind can afford. For a very long time, and indeed until within a very recent period, the only book on anatomy available for the veterinary student or practitioner,

was that on the Horse, by the late Mr. Percivall—a work which could never at any time have been useful as a text-book, as it was notoriously deficient, even so far as regards the only animal it treated of, and has now been discarded by the schools which deserve to be considered "progressive;" we only now require a good manual of physiology to accompany those on anatomy which have been recently added to our professional literature, to make our class-room library complete in this respect. From Dr. McKendrick's well-known reputation as a first-class physiologist, and his thorough knowledge of the continental literature pertaining to this subject, we anticipate the production of a work which will confer a great benefit upon young and old in the profession, raise the standard of our literature, and add to the reputation of the school in which he is a teacher. We will anxiously await the appearance of the much-needed volume, and may safely predict for it a brilliant success.

CONTINUED EXTENSION OF FOOT-AND-MOUTH DISEASE.

As we anticipated in our last issue, Foot-and-mouth disease has continued to spread over the country, and will not cease to do so, in all probability, until the three kingdoms have been pretty severely scourged. The losses this year threaten to be as high as in any year since the malady appeared, and of course the amount of embarrassment caused by the contagion will not be less. It does us very little credit as a provident or sensible people, to allow a malady of this description to inflict such losses, and so seriously to hamper trade year after year, without endeavouring by some kind of organization and management to suppress it, or at any rate limit its ravages. There is no organization worthy of the name; the attempts made to check the disease are in no way uniform—lax to a disgraceful degree in one district, they are needlessly severe in an adjoining one; no efforts are made to trace out and extinguish the sources of contagion; perhaps not one-half the number of cases is reported to the police, and the police are utterly incompetent for the task of controlling the spread of the malady. In this crisis we might well be pardoned for inquiring what are the functions of the Veterinary Department of the Privy Council, and if that department is of any value whatever to the country. If it has any functions, and if it is of any value, we should like to know what they are, and what good is effected. We write with a full knowledge of the difficulties to be contended with in attempts to extinguish certain contagious maladies; but surely when a department, such as the Veterinary Department of the Privy Council is, or rather ought to be, has been in existence for some ten years, we might expect that more would be known with regard to most destructive contagious diseases among our flocks and herds, and that after the great expense incurred in maintaining it, we should be less tormented now than before

its creation. We utterly fail to discover that it has done anything, or on its present footing can do anything, to check the extension of these diseases. Glanders among horses was perhaps never more prevalent than now, even in the vicinity of the Privy Council Office; Foot-and-mouth disease, as we know to our cost, is just as prevalent and free to spread as it was before 1866; while we cannot find that Contagious Pleuro-pneumonia is a whit diminished either in its centres of infection or in its costliness. The system of inland inspection is a burlesque and a delusion; that of port inspection is a real hardship imposed on foreign importers, and will continue to be so if the same consideration is not shown towards them that is so bountifully bestowed on the home-breeder. Port inspection is at all times of very little value, unless it is conducted with the greatest care and skill, and is combined with quarantine, if the animals come from infected countries, and are to mix with home stock. Hundreds of animals carrying the germs of infectious diseases will pass the inspector as sound, and yet each will be capable of tainting an entire district or country.

If some able and zealous Statesman acquainted with the subject would only take it up and give it that attention which its importance demands, he would confer an invaluable boon upon the public. We do not want the bitterness of political partisanship imported into the inquiry, though none but an extreme bigot would venture to do this. It is a subject in which all classes of the community are more or less deeply interested, and political animosities are entirely out of place—are indeed obnoxious—when thrust into it.

The legislators who are so silly as to exhibit their hostility to the agricultural interests could not be consulted in such an inquiry, as they generally know little, if anything, of the matter. Statesmen who could be found to say that they have not much confidence in legislation to prevent cattle disease, and distrust it entirely when it is fixed at a point which meets the views of county members of parliament, would not be in a state of mind suitable for viewing the question on its merits: especially those, who, in alluding to a bill for the prevention of these diseases, and recently passed, publicly state that the country gentlemen were anxious to make it as restrictive as possible, and that its operation in the direction of protection made restriction popular to them. If we mistake not, these sentiments were uttered by an Honourable Member who opposed, to the best of his ability, the granting of compensation to the farmers whose cattle had to be killed in order that the Cattle Plague might be extinguished, and without which the pestilence might have domiciled itself in the country as other scourges of this class have done. The same honourable gentleman, if we err not, has proved himself to be a staunch advocate for free trade in the adulteration of food; he must now be accepted as an agitator for free trade in contagious diseases among animals. We doubt not that he will receive support in this agitation, but chiefly from the few who make a harvest out of public misfortunes. We have no faith in the dictum of such Statesmen, and would prefer that of men who had made themselves acquainted with this serious question.

In the meantime, let us hear what a sufferer has to say, in a letter addressed to the *Norfolk Chronicle*:—

"Allow me in the public interest to write my experience and thoughts on this epidemic, which is a hundredfold more contagious than Pleuro-pneumonia, and is, in my opinion, in a great measure responsible for the present high price of beef. Two years running I have lost my marsh rent from it, and this year, for fear of a like result, have sold my beasts out half fat. I am surrounded by it at marsh now. My ewes and lambs must come down with it; and as I want to graze the ewes, they will suffer ten shillings per head, which is equivalent to a loss of the rent of the ground they feed upon. My neighbours in all directions can tell a similar tale. Six score hoggets fit to kill in an adjoining marsh are now all helpless cripples, and will lose half their mutton and all the soles off their feet. A lot of fine cattle on the other side are some of them perishing with it, and shrinking stones, and losing all their inside fat; the poor marshmen's cows are spoilt by it, and my own marshman, who two years since had ten nice cows, has been ruined. Cows lose their milk, slip their calves, and become worthless; the milk is poison for the time being; young calves, unless taken care of, die. In store beasts it is the great forerunner of Pleuro-pneumonia. Perhaps they come long distances (nearly all our cattle are imported into Norfolk); they stand the market; if sold, are driven off for long distances without food and the fever upon them; are lodged on damp meadows, and take disease of the lungs; or, if not sold, they go back to the dealers' places, and they are nearly all poisoned with Foot-and-mouth complaint; next week they will surely develop it, and so the thing gets spread. Norwich Hill, the dealers' yards, and the lairs around Norwich, the inn yards and meadows where stock are taken in, are great distributors of the disorder; and railway trucks and steamboats ought to be disinfected after every consignment.

"I would ask, is it true that, from careful calculations from reliable statistics, we yearly lose upwards of three millions by this Foot-and-mouth disease? that practically there are no restrictions in the traffic of contaminated stock? Is it not a fact that the West Norfolk farmers last autumn suffered dreadfully from it among their flocks? The ewes warpt their lambs by wholesale and died by thousands, the hoggets were put back months by it, and we may attribute in a great degree the present high price of mutton to its ravages. Is this to be repeated again next autumn, without any endeavour to prevent such a calamity? I say the present regulations are useless, absurd, and unjust. The Veterinary Department of the Privy Council must be in fault. Inspection is a farce. Now and then an unfortunate dealer is pounced upon and fined; but where one animal suffering with the disease on Norwich Hill is detected, thousands pass unnoticed. This appears to me to be the law: We will suppose a farmer to have twenty beasts, not exactly down with this complain, but just exhibiting symptoms, or they may have only been in proximity to an ill lot, just a marsh dyke dividing; he hurries them off to the market. In the first village they pass through, a sharp policeman notices one lame and smacking his lips: it's a suspicious case; he stops the

bullock, puts him in the nearest public-house yard, and reports to his inspector; several are thus stopped, but most of them (because they are not actually suffering) get to market, and are sold, may be, to as many different buyers as there are bullocks. The sender gets fined for the animals caught in the act of being ill; the others are spread broadcast, although morally certain to have it, and all the stopped oxen are so many centres of infection. Or a sheep-dealer has one thousand sheep penned: some are, perhaps, exposed for sale the second or third time, and fall down lame; the inspector chances to notice one, and has it turned up: the feet stink; upon cutting the hoof, it is found separated from the frog, which is red from acute inflammation; the mouth is dry and hot, the lips inside blistered; he is put in a little corner pen, and the whole are looked over; a few decided cases are impounded, for which cases the dealer can be heavily fined, but the others can be sold to ten different purchasers and scattered in all directions, although almost sure to be infected. Evidently, if this is correct, the Privy Councillors want practical advisers.

"All animals that divide the hoof are subject to this malady; pigs suffer fearfully, and I have known a few pigs purchased on Norwich Hill infect every animal on a large farm, causing immense loss and vexation. A gentleman I can name told me the other day he lost £800 by Foot-and-mouth complaint last year. It's a wonderful tax upon consumers, dealers, farmers, and upon owners of land also. Our valuable tracts of grazing marshes (63,000 acres), from the fact of our country being so short of permanent pasture, are much sought after by farmers far and near, but their letting value is considerably diminished by the almost continual presence of this plague. Is there nothing to be done?

"The Norwich people would not like their cattle market closed for two months; the dealers, their trade disarranged; the farmers would grumble to have the Cattle-plague licence system introduced; the occupiers of lairs around Norwich would complain if they had to disinfect, and give a month's clean bill of health before they could admit fresh stock upon their premises; the importers would loudly declare their business ruined if they had to kill all animals at ports of landing, and had to undergo three weeks' quarantine before their cattle could be placed near English stock; but, in my humble opinion, this is the plan to rid us of this pest. It's a severe remedy, but a sure one; it has been tried, and proved a success. The Foot-and-mouth disease is of foreign origin. After the Cattle-plague regulations had been in force a few months, we had no Foot-and-mouth disease for twelve or eighteen months. I believe the remedy I suggest would free us again; and even if it should spontaneously break out (which I do not believe), by applying the Cattle-plague remedy (with the exception of slaughter), we could always stamp out and localize the scourge. If a case of Foot-and-mouth disease appeared on Norwich Hill, I would unflichingly shut it up, and every other spot in England, Ireland, Scotland, and Wales. Then shut out all foreign cattle from contact with ours, and in a short time we should be clear; the cattle trade would be as free as ever, with only an occasional case of inconvenience. I repeat, the Lung disease is a

trifle compared with this. But it is unfair that Ireland should be exempt from the Privy Council Orders—that the lung-diseased lots can be got rid of in Norfolk; for, if I understand rightly, there is no supervision in Ireland.

"With regard to our returns of Foot-and-mouth disease, not one quarter get returned. It is nobody's business in particular—we report them or not as we like. I have now thirty pigs, bought on Norwich Hill last week, not reported, and I am unaware of any law to compel me. My neighbour's sheep are down—cows and all—no report! Will be at market next week perhaps—all right! My neighbour's fat beasts, that did weigh sixty stone, but now, alas, reduced many of them to fifties, are, I know, not reported. All right! Some will be at the Repository next week! This is how we go on in Norfolk, and beef will get scarcer and dearer, mutton leaner and more expensive, and pigs all gold, for the little ones are worth a pound a-piece off their mothers."

INSPECTION OF FOREIGN CATTLE.

In a telegram from Schleswig, dated September 9, we learn that all cattle destined for exportation to England will be inspected by Government (German) officials, and that such inspections are only to be made in open daylight.

This is certainly a step in the right direction, and if the inspection is properly conducted, and the cattle are drawn from uninfected districts, we apprehend they will be readily disposed of in our markets, without any of the vexatious obstructions which have, not without reason, given rise to so many complaints.

RUMOURED MORTALITY AMONGST HORSES IN LONDON.

Towards the end of August, a very alarming rumour was in circulation, to the effect that an extensive and fatal disease had broken out among the horses of the London General Omnibus Company, and that they were dying by hundreds. On inquiry we find that there has been the usual amount of exaggeration; though there has been much illness among them, and a few deaths. In an establishment of two thousand horses, eleven succumbed in three weeks. The malady was apparently a gastric affection, followed by Apoplexy or Laminitis. It ceased with a change of food; and this points out the possible cause of the outbreak. We hope soon to give a detailed account of the occurrence.

TRICHINOSIS IN GERMANY.

Intelligence from Germany informs us that one officer, forty sub-officers and privates, and several civilians, are suffering from Trichinosis at Dresden. The municipal authorities have issued a warning against the consumption of raw pork. The malady has also broken out in the neighbourhood of Lobau.

THE PROPOSED ESTABLISHMENT OF A VETERINARY SCHOOL IN AUSTRALIA.

FROM the files of Australian papers which have recently come to hand, we observe that matters in connection with veterinary science are being anxiously discussed by those who are chiefly concerned in the agricultural prosperity of that essentially pastoral region of the Southern Hemisphere. First and foremost is the question of founding a veterinary college and hospital at Melbourne; and we find that the *Journal of the National Agricultural Society of Victoria*, for May 5th, strongly insists upon the necessity of establishing such an institution, in view of the serious losses now sustained in the colony by diseases among animals, and the great value of the stock exposed to serious maladies of different kinds. That excellent journal says: "It does not appear to be sufficiently understood that we are essentially a pastoral people. With our colony containing upwards of 70,000,000 acres, the agricultural area is but an infinitesimal portion, more than nine-tenths of the whole of the land being uncultivated. In the second paper on the subject of a Veterinary College, which we published in our January number, the value of horses, sheep, and cattle, at present depasturing in the Australasian colonies, represents in the aggregate £48,138,138; and the value of the wool exported during the last season amounted to upwards of £7,000,000 sterling. Of this a considerable portion comes from Riverina, which, so far as our commercial relations are concerned, we may look upon as an integral portion of Victoria. Yet, with all this enormous amount of stock depasturing, we have made but little advance towards establishing an institution to educate the youth of the colony in the veterinary profession. As our colony becomes more densely stocked, which must be the case with increase of population, the risk of diseases appearing will be the more imminent; and if a college were established in Melbourne to-morrow, it would be at least three or four years before its results in sending forth properly qualified practitioners would manifest themselves. At the late conference of Stock Inspectors, held in Sydney in November last, Mr. Alexander Bruce, Chief Inspector of Stock for New South Wales, gave the following as an approximate estimate of the losses sustained by the Australian colonies through preventible diseases in stock:—

Pleuro-pneumonia in cattle	£8,000,000
Scab in sheep	20,000,000
Catarrh	2,000,000
	£30,000,000

This does not include losses from fluke and worms, or the Cumberland disease, which proved fatal to many thousands of sheep on the Castlereagh and Namoi rivers in New South Wales some years since; and the losses through this disease, so-called Cumberland, but the nature of which, from the want of proper veterinary investigation, was never fully sacertained. The dread effect of this disease manifested itself in

sacrificing many valuable human lives, caused by blood poison being introduced into the system of men employed in skinning the sheep that died. A disease called the Blackleg also proved fatal to large numbers of cattle in New South Wales, in the years 1847 and 1848; and so suddenly did it attack them, that rarely more than half-an-hour elapsed from the first symptoms appearing until the beast was dead.* The same disease also attacked horses; three racehorses, training in Coutt's stables, at Homebush, dying very suddenly at this time. We mention these facts to show how liable we are to sudden and fatal outbreaks of disease among our stock, without any notice or premonitory symptoms; and how utterly helpless we would be for want of an adequate and properly-organized veterinary staff, should future epidemics appear. We must look beyond our own immediate consumption for outlets for our yearly-increasing stock. Fiji, with its daily augmenting population of Europeans, is almost totally devoid of cattle and sheep, and the time is not far distant when our colonies will be called upon to supply their demands by a regularly organized trade. Europeans will not live on yams and pork, and salted provisions; and as the islands are not adapted to the rearing of stock, it must be imported. Again, India looks to us as the most reliable source of horse supply; and as this is certain eventually to assume very large proportions, it is of the greatest importance that we have the necessary veterinary skill to supervise and attend when any illness or outbreak of disease appears.

"To practically illustrate the value of the veterinary profession, we will say,—A farmer in a remote district has one hundred cows, which he values at, say, £7 per head = £700. A disease similar to what we have described appears, and he loses, through want of professional skill, say, twenty of them; this is a loss in direct money value of £140. Could he call in veterinary aid at once, and, by skilful treatment, save fifteen out of the twenty that would otherwise die,

His loss would then be	£35	0	0
Say veterinary surgeon's fee	20	0	0
	£55	0	0

He would then save £85, besides being instructed how to act for the future; and be able, under instructions from the surgeon, to adopt such sanitary and preventive measures towards the rest as would secure him from further losses. When disease attacks us is not the time to make preparations to repel it; we must have them provided beforehand. To be forewarned is to be forearmed; and we sincerely trust our pastoral and agricultural friends will give this most important of all subjects to their interests the attention to which it is so pre-eminently entitled."

The same journal remarks that a Veterinary College and Hospital in Melbourne, presided over by competent professors, would be at once recognized by the profession in England and the Continent as of the highest possible importance; and it adds that the fact of no similar

* The "Cumberland" disease and "Black-quarter" are forms of Anthrax.—ED. *V. J.*

institution existing in the Southern Hemisphere, leaves the European societies completely in the dark, and ignorant of many diseases and parasitical affections that may exist, not only in the domesticated, but likewise wild animals, and which, until such an institution is established, will probably never be discovered or investigated. "At present," it confesses, "we are almost in the dark regarding the every-day results of scientific investigations at home; and the English veterinarians and helminthologists are quite unacquainted with our researches and the diseases—many of them minor and at present insignificant—peculiar to our stock, as we are of what is going on in England and the Continent. Direct correspondence would be the immediate result of the establishment of the college, and both Europe and Australasia would be mutually benefited by the results of investigations, the importance of which is at present, unfortunately, but too little understood and appreciated by our colonists."

Of the necessity for a veterinary school to supply the wants of the immense pastoral and agricultural regions at the Antipodes, and which form such an important and valuable section of the British empire, there is every evidence; and the sooner it is established, so the sooner will our countrymen in the Southern Hemisphere reap the benefits to be derived from it. If our advice in the matter could be made available, we would urge the necessity of making it a national school, on the model of those now being established by Russia. If the example of England is followed, the advantages gained will not be of much value, and they will be long before they can be realized. The school ought to be founded by the colony, and should in no way have to compete with and underbid private practitioners; nor should it receive everybody, no matter whether they are educated or not, give them a smattering of the rudiments of professional knowledge, then hurry them out on the world to make room for more—all because the teachers must live, a few subscribers be benefited, and the establishment be kept afloat. Let the institution be commenced with a view to its immense utility, present and prospective; let it be maintained by those for whose benefit it is more especially devised—the whole colony; select the best teachers to be found, who would make veterinary science their earnest study; pay these men well by fixed salary and according to merit, and if possible do not allow them to have any share of student's fees; let no one enter the school who had not received a general education equal to the medical student, and allow none to practise veterinary medicine until they had studied for a period of at least four years. Let the colony do this, and the expense and trouble connected with the establishing and maintaining such a school will be repaid a hundredfold; while a large debt of gratitude will be due from human and comparative pathology. In no way, perhaps, could our Australian brethren more largely benefit themselves and others, advance the science of medicine, and both directly and indirectly promote the aims of civilization, than by creating such a school; and they now have the wealth and the intelligence to make the projected scheme an accomplished fact. We trust soon to learn that it is so.

PROTECTIVE INOCULATION FOR CONTAGIOUS PLEURO-PNEUMONIA IN AUSTRALIA.

For a number of years, inoculation has been practised in Australia as a protection against the inroads of the fatal and harassing bovine malady, Contagious Pleuro-Pneumonia—a gift from Britain to her colonies; and the advantages attending this measure appear to have been so palpable and great, that it is now resorted to on a large scale. The experience of inoculation in Australia coincides with that now so largely accumulated in Europe; and as testimony of this description is of far more value than mere preconceived theoretical notions, it may be concluded that the benefit to be derived from its adoption is not so infinitesimal or visionary as a very small number of authorities would have us believe.

Mr. Bruce, the chief inspector of stock in New South Wales, has recently presented a report which goes a long way to prove what has already been demonstrated conclusively at the Cape of Good Hope and in America, but, most conclusively of all, in France, Germany, Italy, and Holland. This report appears to have excited the ire of the Editor of the *Australasian*, who, in the issue for June 12, comments rather strongly upon Mr. Bruce's evidence, and the way in which it was obtained. Every one in favour of inoculation comes in for a share of severe criticism, though we cannot discover why; as no testimony is offered against the value of the measure. Of course, we find ourselves referred to; and if the prefix of "Professor" had not been imposed upon us, we should not, perhaps, have questioned the fairness or competency of our Antipodean colleague in his allusion to our opinions or our professional *status*. As to the trustworthiness and value of our opinion, we intend, at an early opportunity, to offer evidence, chiefly theoretical and practical, that inoculation is a protective measure in this disease. With regard to the honourable position which the Editor of the *Australasian* confers upon us, we regret that neither our ambition nor our abilities have permitted us to aspire to it. In the work which Mr. Editor quotes as our production, he will find testimony—not Australian only—that would, perhaps, satisfy the majority of men who can weigh evidence. When we declare ourselves perfectly impartial in the matter, and only anxious to arrive at the truth, perhaps he will kindly furnish us with his reasons for ignoring evidence of an affirmative character, and give us his negative proofs. In this country, the value of inoculation has been discredited by one or two authorities; though, so far as we can ascertain, on very unsubstantial grounds. We must not forget that, for many years (and even at the present time with some impenetrable intellects), vaccination was discredited and abused by men who had more pretensions to scientific knowledge than they who now close their eyes and ears, and hold to their opinions, with respect to this inoculation. A question of this kind is not to be disposed of by mis-statements and cynicism; it is simply one of proof, and by far the largest preponderance of evidence is in favour of inoculation, in every region of the globe in which it has been extensively and fairly tried.

We find that the chief inspector of stock in Queensland, Mr. Gordon, in his report alludes to this disease and to protective inoculation—another addition to the many witnesses. "Pleuro-pneumonia has been prevalent in many parts of the colony during the year, and its spread has been very greatly accelerated by the entire absence of all restrictions on the travelling of diseased cattle. Although the disease has not been so virulent in the case of stationary cattle as during previous outbreaks, the losses amongst travelling stock during the present attack have, in some instances, exceeded all previous experience of the disease. *Inoculation has been very generally resorted to, and so far as I can learn from those owners with whom I have come in contact or been in communication, is by a large majority believed to be preventive, when properly performed.* It will have been observed by the resolutions passed at the recent conference, that it is recommended that inoculation shall be made compulsory in certain cases; that is, when the disease has appeared in a herd, or where the virus can be procured within a practical distance of the run. As there are many, however, who, although practising it in their herds, believe that, with our present incomplete knowledge of its action, inoculation should not be made compulsory, it would, in my opinion, be wise to defer this action until the board of inquiry shall have inquired into and reported on the subject."

Animated by the same motives which have always guided us in our inquiry into the value of inoculation as a protection against this disease, we shall esteem it a great favour if our friends in Australia, or elsewhere, will communicate any evidence *pro* or *con* with regard to this measure. It is a question of great moment, and deserves far more attention in England than it has hitherto received.

SERIOUS DISEASE AMONG HORSES IN AUSTRALIA.

THE Australian papers state that an alarming disease has broken out among the horses, and that in one district they are dying on every side; consequently, ploughing for fallow is temporarily suspended, and up to the present time no remedy has been discovered to check the progress of the malady. The disease can first be noticed by the mouth and tongue swelling, after which the lips rot and fall off in small pieces.

It is not unlikely that, if these symptoms are correctly described, the disease is Glossanthrax—a form of Anthrax, and not necessarily fatal, if treatment is promptly adopted. The malady and its treatment—preventive and curative—are described in the second volume of "Veterinary Sanitary Science."

Reviews.

AN INTRODUCTION TO THE OSTEOLOGY OF THE MAMMALIA: Being the substance of the Course of Lectures delivered at the Royal College of Surgeons in 1870. By W. H. Flower, F.R.S., F.R.C.S. London: Macmillan and Co.

The science of Comparative Anatomy is making such rapid strides towards what, we suppose, would be designated perfection, that it requires a considerable amount of time and attention to keep oneself acquainted even with the more salient facts which are almost daily being added to the multitude upon which it is based.

And with the great progress which has been made in recent years, through the researches of most able and indefatigable inquirers, there has arisen a very laudable and encouraging desire among those who cannot be included as scientific or medical—the general public, in fact—to learn more or less of the anatomy and physiology, not only of our own species, but of the many creatures who are denizens of the earth, air, seas, rivers, or lakes.

Zoology is now what may be designated a popular study, and many even of the lower-class schools have introduced its rudiments as a branch of knowledge which it is desirable to teach young people.

Students of human medicine have for many years been required to know a good deal of this subject, and no doubt in time veterinary students will have also to acquire some notion of it. Indeed, if a knowledge of zoology is necessary for the medical student, how much more is it essential that he who is destined to minister to the requirements and restore the disordered functions of many animals, should be well acquainted with it.

The first step in the acquisition of this knowledge, so far at least as the vertebrata are concerned, is to learn all the most important facts with regard to the structure and modifications of the skeleton, it being the framework upon and around which the rest of the body is built up; consequently, it affords, better than any other system, an outline of the general organization of the whole animal. It also possesses another great advantage in being the most convenient for examination, on account of the facility with which it can be preserved and examined.

This particular branch of study, which has been named "Osteology," has an additional attraction, and one of special importance in comparison with that of any other system, inasmuch as very many animals—all, in fact, of those not at present existing on the earth—can be known to us by little else but the form of their bones. In itself, then, this subject possesses great attractions for the anatomist and palæontologist; but its study is, besides, of much practical utility to the veterinarian. Those of us who had to learn the anatomy of the only animal at that time dissected in the veterinary schools—the horse—from a now old-fashioned text-book, will be rather surprised to find that an almost new nomenclature has succeeded that then employed. This modern nomenclature

possesses great advantages over the old clumsy one, so far as precision and facility of description are concerned. In this respect anatomy is on the same footing as modern chemistry, and the technical terms of both are much simplified and improved.

These remarks have been elicited by the perusal, or rather we should say study, of Professor Flower's excellent little manual on "Osteology," which we ought to have noticed ere this. Though it is based on a course of lectures delivered a few years ago at the Royal College of Surgeons, yet the matter has been so arranged that it now forms a capital manual or handbook for students, and is in every way to be commended as an admirable exposition of modern osteology: devoid, as it is, of theoretical views, not overburthened with unnecessary technical terms, and those employed being the most appropriate.

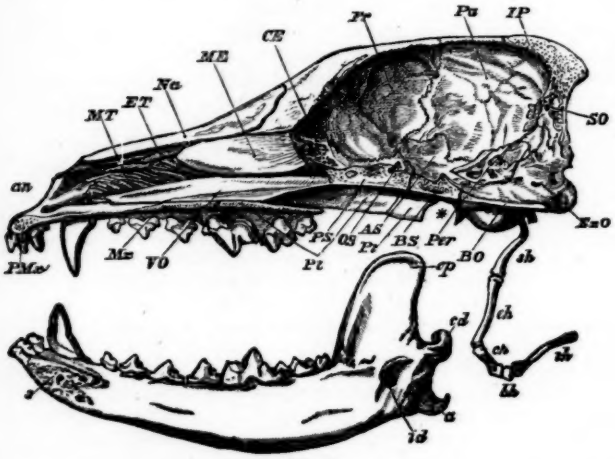

Fig. 30.

Longitudinal and vertical section of the Skull of a Dog (*Canis familiaris*), with mandible and hyoid arch. Half the natural size. *an*, Anterior narial aperture. *MT*, Maxillo-turbinal bone. *ET*, Ethmo-turbinal. *Na*, Nasal. *ME*, Ossified portion of the mesethmoid. *CE*, Cribriform plate of the ethmo-turbinal. *Fr*, Frontal. *Pa*, Parietal. *IP*, Interparietal. *SO*, Supraoccipital. *ExO*, Exoccipital. *BO*, Basioccipital. *Per*, Periotic. *BS*, Basisphenoid. *Pt*, Pterygoid. *AS*, Alisphenoid. *OS*, Orbitosphenoid. *PS*, Presphenoid. *Pl*, Palatine. *Vo*, Vomer. *Mx*, Maxilla. *PMx*, Premaxilla. *sh*, Stylohyal. *eh*, Epihyal. *ch*, Ceratohyal. *bh*, Basihyal. *th*, Thyrohyal. *s*, Symphysis of mandible. *cp*, Coronoid process. *cd*, Condyle. *a*, Angle. *id*, Inferior dental canal; the mandible is displaced downwards to show its entire form, the * indicating the part of the cranium to which the condyle is articulated.

Commencing with the classification of the Mammalia, and the consideration of the skeleton as a whole, the bones composing the different regions, with their special characters, are described in the different types of species; the whole terminating with a review of the correspondence

between the bones of the anterior and posterior extremity, and the modifications in the positions of the limbs.

The most recent views in connection with the subject are most concisely given in simple and graphic language, which an ordinary student could at once comprehend; and there are no fewer than one hundred and twenty-six carefully drawn illustrations, as well as a very ingenious diagram intended to exhibit the relationships which appear to exist between the different groups of the Mammalia.

The work possesses an additional claim to the notice of the veterinary surgeon, from the fact that it deals largely with the osteology of the

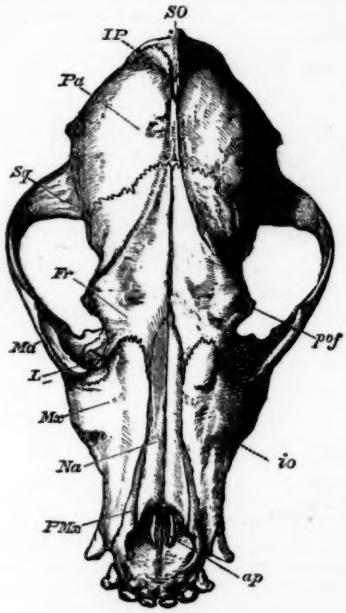

FIG. 31.

Upper Surface of the Cranium of a Dog. Half the natural size. *SO*, Supraoccipital. *IP*, Interparietal. *Pa*, Parietal. *Sq*, Squamosal. *Fr*, Frontal. *Ma*, Malar, *L*, Lachrymal. *Mx*, Maxilla. *Na*, Nasal. *PMx*, Premaxilla. *ap*, Anterior palatine foramen. *io*, Infraorbital foramen. *pof*, Postorbital process of frontal bone.

animals which more especially come under his care. For instance, in speaking of the skull, Professor Flower writes: "It will be well to commence the study of the skull by describing that of a dog, as a good average specimen of the class, and one which is easily procurable at various ages; and I would strongly advise the student to follow the description with a skull in his hand, or two would be better, in one of

which a longitudinal median section has been made; in the other, the various bones should be separated from each other. For this purpose a young animal, still retaining the milk teeth, will be best." To this is added a note to the effect, that when the zoologist wishes to throw into the strongest relief the distinctive characters of different species, he selects for comparison fully adult examples; when the anatomist wishes to trace their community of structure and their resemblances, younger specimens are better adapted for this purpose.

In order to facilitate the simple and instructive description of the bones of the skull, the annexed wood-cut is introduced, and its explanation is given in the modern nomenclature.

The upper surface of the skull is described and illustrated in a similar manner, as fig. 31 will show.

For the order Ungulata, the skull of the horse is selected as the type,

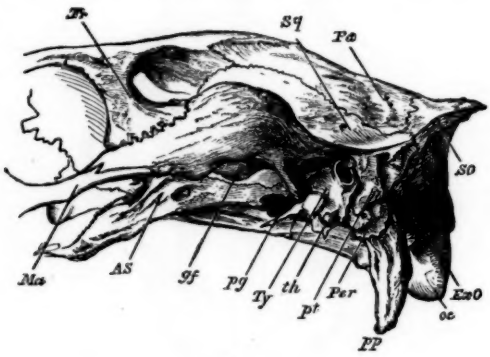

FIG 32.

Side view of the Posterior part of the Skull of a Horse. One-third the natural size. *Fr*, Frontal (the line points to the postorbital process). *Sq*, Squamosal. *Pa*, Parietal. *SO*, Supraoccipital. *ExO*, Exoccipital. *oc*, Occipital condyle. *pp*, Paroccipital process. *Per*, Mastoid portion of periotic. *pt*, Post-tympanic process of squamosal. *th*, Tympano-hyal. *Ty*, Tympanic. *pg*, Postglenoid process of squamosal. *As*, Alisphenoid (the line points to the plate of the bone which bridges over the alisphenoid canal). *Ma*, Malar.

and capitally described. The posterior part is chosen for illustration by the artist, as is depicted in fig. 32.

Perhaps the advantages of the new nomenclature are best exemplified in the description of the hyoidean apparatus, where, instead of the long unmeaning designations previously used to designate its different parts, we have now such simple and expressive terms as "stylohyal," "epihyal," "ceratohyal" (the three constituting the anterior cornu), and "basihyal" (or body of hyoid), as well as "thyrohyal" (or posterior cornu).

We think we have said sufficient to show the scope and the character of the work, which is worthy of the distinguished Curator of the Royal

College of Surgeons; and we can heartily recommend it to the veterinary student as a valuable adjunct to his dissection manual. It is essentially a student's handbook, and it may be studied with benefit by those who, though they have left college, are nevertheless always students. It is well printed on good paper, and is sold at a small price; these, with its other great merits, should obtain for it a place on the writing-table of every naturalist, anatomist, and veterinarian.

Abstract of the Proceedings of Veterinary Medical Societies, etc.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE thirtieth meeting of this Association was held at the Swan Hotel, Wolverhampton, on Tuesday, August 24th, 1875. The President, Thomas Greaves, Esq., Manchester, in the chair. There were present: Principal Williams, of the New Veterinary College, Edinburgh; Messrs. Cartwright (senior and junior), Beddard, Brock, Pritchard, Dorber, and Hill, of Wolverhampton; Blakeway, Stourbridge; Proctor, Coventry; Markham, Rugby; Earl, Shiffnall; Attwood, Bilston; Cartwright and Barnes, Whitchurch, Salop; Hodgkinson, Uttoxeter; Stanley, senior, Birmingham; Trigger, Newcastle, Stafford; Olver, Tamworth; Kettle, Market Drayton; Bell, Eccleshall; Roberts, Oswestry; and Over, Rugby; etc., etc.

The minutes of last meeting were read and confirmed, and the accounts were audited and found correct. The president remarked that the principal event of the meeting would be an address by Principal Williams, on "The Rationale of the Treatment of Disease," which subject was one of the most important that could be brought before them. He felt proud that they had Principal Williams with them, because he believed no gentleman in the veterinary profession could give clearer views with respect to the treatment of disease generally. They all knew that the treatment of disease at the present day differed very materially from that of times past. They had not now that blistering, bleeding, and purging for disease, and he believed he might add that they had not so many fatal cases as they had in former years. He made this statement upon the foundation of a forty years' experience. Some persons, including a number of pathologists, asserted that there had been a change in the type of disease; but he (the speaker) was of a different opinion. Possibly, however, they would hear something upon the question.

Principal Williams then delivered his address. He remarked that the members of the association had themselves chosen the subject upon which he should speak. It was a most difficult subject, and of such magnitude that it would take a large book to exhaust it. It was desirable that he should bring before their notice a type of disease generally before they could understand anything about its treatment, and for this purpose he thought it best to describe to them the changes which took place in what was visible to them; because he believed that the changes they could see in wounds were typical of the changes which took place in the internal organs beyond their observation. If a wound was made without any great amount of violence—if it was an incised clean-cut wound—the following changes would be visible: First, there was some degree of hæmorrhage, after which followed an effusion of serum, which was succeeded by what Mr. Paget called the "glazing of the wound," viz., the exudation of lymph. If in this

latter stage the lips of the wound were brought into apposition, they found that the lymph became speedily converted into fibrous tissue, and the wound was healed. After practical experience he could recommend to the very careful consideration of his hearers the method of treating wounds advanced by Professor Syme, as far better than the stitching up of the wounds as soon as possible after the infliction of the injury. When an injury or an irritant had been applied to a tissue, it became inflamed, and they found that in accordance with the strength of the irritant or the degree of the injury was the degree of inflammation. If the irritant was weak or the injury slight, the inflammation resulting would be simply that of the adhesive process, and the part would be repaired in the simplest manner possible, provided it were kept entirely at rest. But if the injury to the tissue was severer, the repair was effected by the suppurative process, which was of much greater length. Let them take, for example, inflammation of the pleura, as perhaps being the most common form in which veterinary surgeons had to deal with it. Of course, they would admit that, before the pleura or any other membrane could be inflamed, there must be an injury or an irritant of which the inflammation was the result. It was now acknowledged by all pathologists that inflammation was simply a natural response to an irritant or injury, and if a tissue were not to inflame after the application of an irritant or the infliction of an injury, then undoubtedly the part which would not inflame would be in a most unnatural condition. The inflammation of a part, therefore, was perhaps not so serious a matter to encounter as it had been considered in the past. It had been the custom to endeavour to cut short inflammation as soon as possible; but he believed that light was now dawning upon the profession, and that it was evident that such endeavours had frequently resulted in the death of the patient. It should be their object, seeing that inflammation was but a natural result of certain causes, to prevent a continuance of the causes, and thus assist nature in her process of repair. His experience had led him to conclude that, in course of time, the profession would believe what he now believed, and what was impressed upon him more and more as he grew older, namely, that counter-irritants in whatever form, whether mustard, cantharides, or scalding water, when used in chest diseases, were seldom conducive to any good, but very frequently were productive of great harm. He believed that counter-irritation had caused the death of thousands of animals. His firm opinion was that there had been no change in the type of disease. During the days of "heroic" treatment, of bleeding and blistering, animals died violent and agonising deaths, their pulse beating at a tremendous rate, and their respirations being too rapid for man to count. But now, when animals died, they died without that pain and excitement, and that irritative fever, which they had in the past. There were fewer deaths than formerly, and he believed that the more acute character of the diseases to which they were subject in the past was due more to the treatment of a disease than to its nature. The speaker next proceeded to a scientific comparison of Chronic and Acute Inflammation; remarking that in a chronic stage there was no effort on the part of nature to repair, and that it was, therefore, the more destructive. He also referred to other diseases, in which he stated the remedies formerly used had been productive of much harm, and that the course now adopted was to keep up the strength of the animal by food, and to assist its recovery in other mild but efficacious ways.

A lengthy discussion followed the delivery of Mr. Williams' address, the point principally dealt with being that relating to counter-irritants, on which many and varied opinions were expressed. A hearty vote of thanks was accorded to Principal Williams for his address.

The meeting next proceeded to the election of officers for the ensuing

year. The president, T. Greaves, Esq., was unanimously re-elected. Mr. Earl, Mr. Trigger, and Mr. Olver, were elected vice-presidents. Mr. A. B. Proctor was re-elected treasurer, and Mr. Palfrey, secretary.

Mr. Edward Beddard, Wolverhampton, and Mr. Robert Trigger, Newcastle, Staffordshire, were unanimously elected members of the association.

The members afterwards dined together, and the usual loyal and complimentary toasts were duly honoured before the company separated.

YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual Summer Quarterly Meeting was held at the Queen's Hotel, Leeds, on Wednesday, August 18th. The President, Mr. J. W. Anderton, in the chair. The following members were present: Messrs. Greaves, Manchester; Naylor, Falding, Wakefield; Carter, Walker, Bradford; Ferguson, Cuthbert, Leeds; Scriven, Aberford; and Faulkner, South Milford. Mr. Hingston was present as visitor. Apologies for non-attendance were received from the following, expressing their regret at not being able to attend: Messrs. Bale, Otley; Schofield, Pontefract.

The minutes of the last meeting having been read and confirmed, Mr. Faulkner was admitted as a member.

Mr. J. H. Ferguson, Leeds, exhibited J. T. Thompson's "Tooth-Shears;" also some abnormal growths of molar teeth which had been removed by them. He gave a graphic account of the easy removal of the same, and good qualities of the instrument.

Mr. Greaves, Manchester, showed a circular saw for removing abnormal growths of teeth; but it did not, in his opinion, in any way come up to Thompson's invention.

Mr. Walker, Bradford, also exhibited an apparatus for keeping a fractured jaw in position, and at the same time allowing the animal great facilities for eating. It met with the hearty approval of the members.

Mr. Greaves proposed that a *fac-simile* of each of those instruments be purchased by the society, and placed in the hands of the secretary for the use of the members. The proposition was seconded by the president, and carried unanimously. A vote of thanks was accorded to Messrs. Greaves, Ferguson, and Walker for their valuable information. It was also proposed and carried unanimously, that a report of this and all other meetings of the society be sent to Mr. Fleming for insertion in his Journal. After the usual vote of thanks to the president, the meeting terminated.

WM. BROUGHTON, *Secretary.*

THE PATHOLOGICAL SOCIETY OF LONDON.

AT a meeting of this Society, held last May, the crop of a duck was shown, in which seventeen nails were found. Dr. Crisp exhibited recent specimens of tubercule in a pheasant. He had examined thirty birds within the last few weeks; the liver was affected in all, the intestines in many, the lungs in one only. The tubercule differed essentially, Dr. Crisp held, from that found after inoculation. Cocks were rarely affected; and the affected hens had, as a rule, two broods within the year.

The president (Mr. Pollock) inquired of Dr. Crisp whether he had ever seen a disease resembling scarlatina in fowls. He had been informed of a fatal disease among fowls, resembling scarlatina. Dr. Crisp replied in the negative.

Dr. Crisp exhibited a specimen of hæmorrhage into the spinal cord of a fowl which had been shown by him at a former meeting. The animal did

not improve, and was killed. A few small coagula were found in the cervical portion of the cord. Dr. Crisp showed a third specimen—a malignant tumour from the breast of a fowl; also a cystic tumour from the orbit.

ROYAL (DICK'S) VETERINARY COLLEGE, EDINBURGH.

Prizes awarded at the close of the Summer Session, 1875.

The Dick gold medal for Anatomy, Robt. Rain, Castle Douglas.
" silver " " J. McFadyean, Barrachan.
" gold " Chemistry, J. McFadyean.
" silver " " Robert Rain.

Special prize for Botany, offered by Professor Balfour. Open to the students of both Colleges.

First, J. McFadyean, with 80 per cent. of marks.

The Highland and Agricultural Society's medals are not competed for until the close of the Winter Session, 1876.

Jurisprudence.*

WOLVERHAMPTON BOROUGH.—THURSDAY, August 26.

SELLING A GLANDERED HORSE.—Henry Sparks, a horse dealer, of Wednesfield, was charged with having offered for sale in the Wolverhampton market a pony suffering from Glanders.—Mr. J. E. Underhill appeared in support of the prosecution, and Mr. Barrow for the defendant.—Cornelius Twycross, of Coventry, said he attended the Wolverhampton market on the previous Wednesday week, and saw a pony being offered for sale by auction by Mr. Cassere. The defendant Sparks was walking the pony about whilst Mr. Cassere was selling the animal. He (witness) ultimately bought the pony for £7. At that time he had not noticed anything the matter with it, but directly after he had concluded the purchase a person came up and told him something which induced him to look under the pony's throat. He then found a swelling under the throat, from which matter was exuding. The skin had been drawn over the wound, so as to conceal it. He then went in search of a policeman to take the pony to a veterinary surgeon. He found P.C. Bealey, who accompanied witness with the pony to the yard of Messrs. Cartwright and Hill, in Market Street. Mr. Hill examined the pony, and pronounced it to be glandered. Bealey then took the pony to the police station, and witness went in search of the defendant. He found him, and told him that he had deceived him, as the pony was glandered. Sparks, in reply, said he had only had the

* In this section of the *Veterinary Journal* we intend to introduce only legal cases which, from their novelty or scientific interest, may deserve to be recorded. The demands upon our space are already so great, that we are sure our readers will pardon us if we decline to introduce law cases which, from their trivial character or frequency, are neither so interesting nor so instructive as other matter which they would take the place of. The above case is an instance of the attempts often made, and, we regret to say, with success, to dispose of glandered horses.—ED. *V. J.*

pony a fortnight, and did not know that anything was the matter with it. He said he bought it of a man whom he called the "Welshman." He afterwards found the man referred to, and they all three went down to the station together, where the pony was. On being told there that the pony was glandered, and the wound pointed out, defendant said he was very sorry he had sold him the pony, and he suggested to the Welshman that he should contribute one-half the purchase-money, and he would give the other half, so as to let witness have the money back that he had paid for it. The Welshman, however, refused to agree to this arrangement, and defendant then talked about giving him into custody.—By Mr. Barrow: There was no attempt at concealment when the pony was offered for sale. By Mr. Underhill: The pony had harness on it when it was being sold, and the bridle would prevent my seeing the wound.—By Mr. Barrow: I afterwards spoke to Mr. Cassere, and told him the pony was glandered, and he said he was surprised at the time that the pony was not brought into the open market before the sale took place.—P.C. Bealey said he saw the pony was glandered as soon as it was shown to him.—Charles Dawson, inspector of markets, proved that he obtained an order from the magistrates to have the pony destroyed. Before it was killed it was seen by Mr. Beddard, veterinary surgeon, on behalf of the defendant, and he, after examining the animal, stated that it was suffering from Glanders.—Mr. Hill, veterinary surgeon, said his attention was called to the pony, which was brought to their yard on Wednesday week. It had previously been seen by his assistant, Mr. Brock. On examining the pony, he found that it was suffering from Glanders. The skin on each side the lower jaw had been sewn with thread over the enlarged gland, with the object of concealing it. The case was a very bad one, and was very dangerous to other horses that it might have been taken near. The pony was a very good-looking animal, and had it not been suffering from this disease it would have been worth £25. It must have been affected with the disease at least a month.—In reply to the bench, Mr. Hill said the pony was in such a condition, that the disease from which it was suffering was plainly perceptible to any one acquainted with horses, who might have had the handling or charge of the animal.—The defence was that Sparks did not know at the time he sold the pony that it was glandered; and, in support of this, Mr. Barrow stated that defendant had openly offered the pony for sale in the Birmingham market on three occasions during the last three weeks, and twice in the market of Wolverhampton.—Mr. Walker said the bench considered the case proved, and, considering the dangerous nature of the disease to both men and horses, they should fine the defendant £5 and costs.

Notes and News.

NUMBER OF CONTINENTAL GRADUATES IN VETERINARY MEDICINE APPOINTED IN 1873-74.—From the reports issued from the Imperial Chancellor's Office, it appears that during the examination year, 1873-74, the recognized central authorities granted diplomas to graduates in veterinary medicine in the following numbers to the different sections of the German Empire :—Prussia, 53 ; Bavaria, 9 ; Saxony, 6 ; Wurtemburg, 12 ; Hesse, 2 : total, 82. The number of graduates in human medicine was 647 ; the relative proportion of veterinary to medical graduates is therefore nearly one to eight.

In France, 118 graduates were admitted into the profession in 1874 : 52 from Alfort, 31 from Lyons, and 32 from Toulouse. In addition to this number, six non-qualified practitioners successfully underwent the prescribed examination, and obtained the diploma of "Médécin Vétérinaire."

In Switzerland, 46 candidates appeared for examination in veterinary medicine : 28 for the preliminary and 18 for the special examination ; 22 of the former and 16 of the latter were successful. Three non-qualified practitioners received their diploma, and three were rejected.

STATISTICS OF THE VETERINARY HOSPITALS OF THE BAVARIAN ARMY.—In 1874, 2308 horses were admitted for treatment into the Bavarian Army Veterinary Hospitals. Of these, 1593 were cured, 16 relieved were transferred to other branches of the service, and 14 were cast and sold. The deaths were 27, and 20 had to be destroyed : 3 affected with glanders and farcy, 3 because of fractures, and 14 for "mange" (*gale*). There remained under treatment 638 horses.

Of the 27 which died, 11 perished from typhus, 14 from inflammations, and 2 from congestions.

REMOUNT HORSES IN INDIA.—The Indian Government notice for the purchase of remount horses has been published, and from it we see that the requirements for 1875-76 are one thousand horses. For the following year six hundred only will be wanted. The horses must be between the ages of four and seven, and the average price of each remount has been fixed at five hundred and fifty rupees (£55). "But," says the notice, "every horse presented for purchase will be valued separately, and higher or lower prices may be given, provided that the average of the purchases does not exceed that limit."

CAPE HORSES FOR THE INDIAN ARMY.—Mr. Thacker, Staff Veterinary Surgeon, has been visiting the Cape of Good Hope, to try to make arrangements for a regular supply of horses for Indian Cavalry remounts.

EFFECTS OF COFFEE UPON HORSES.—A Veterinary Surgeon of Prague has discovered that strong coffee has a wonderfully recuperative effect upon decrepid and overworked horses. In a very short time it renews their vigour, smoothes their skin, and restores their full capacity for work.

GLANDERS IN HORSES.—Having regard to the appearance of Glanders in five horses recently sent from Jersey to England, and destroyed on landing at Southampton, the States Island Defence Committee have written to the Privy Council asking for an inspector to be sent over, when an examination of the stables will be made.

THE DOG-TAX.—The payments in the financial year ending March last, were, for the dog-tax, £317,984 10s.

DEATHS FROM HYDROPHOBIA.—An inquest was held in London, on September 7, on the body of J. R. Sewell, aged twelve years, who was bitten by a cat on July 14. The cat had had kittens in Holiday-yard, Ludgate Hill, and the neighbours had drowned them. The mother made such a noise subsequently, that a woman gave the deceased a penny to drown her. He caught the cat, and she bit him. The boy died in September, on the day named, in St. Bartholomew's Hospital, of Hydrophobia of a "malignant" kind, according to the reporter. The jury returned a verdict of Accidental death.

Two cases of this dread disease are also reported to have occurred in the country, at the commencement of September. The first took place near Accrington, where a child, aged two years, was bitten three months ago by a dog, which subsequently became mad and was destroyed. The wound soon healed, and the child's health was not affected until it was seized with Hydrophobia, from which it died. The next was that of a collier at Burslem. who was bitten about seven months ago, while giving some medicine to a dog. The wound was cauterised, and quickly healed. He was lately seized with all the symptoms of Hydrophobia, and died in great agony in two days. Large doses of chloroform which were administered appeared to produce little effect. On September 18, an inquest was held at St. Thomas' Hospital on the body of a man who had died there of this malady.

PIG DISEASE IN AMERICA.—Hog Cholera is carrying off numbers of victims among the North Carolina porkers.

PIG EPIZOOTY IN IRELAND.—A disease of a very peculiar kind has set in among pigs in the co. Longford, which the sanitary officers call "Cholera," and by which the animals die instantaneously. Last week at Drumlish a case of the kind occurred, but by the direction of the sanitary officer the animal was buried at once, and this week the disease has set in with great virulence in the town of Longford. The most singular feature of the disease is that no discoloration of the skin takes place. Great apprehension is entertained lest the disease should spread.

EPIZOOTY IN KANSAS.—In the neighbourhood of Elmwood, Kansas, a fatal horse disease, which farmers say is incurable, has broken out, and is carrying off numbers of the stock.

TRANSMISSION OF FOOT-AND-MOUTH DISEASE TO MANKIND.—Quite recently there has been an outbreak of Foot-and-mouth disease in the neighbourhood of Thurles, Tipperary, Ireland, and while it prevailed there was much sickness among the children in the locality. The sickness was supposed to have been due to the deleterious effects of drinking milk from cows suffering from the malady.

Obituary.

Veterinary Surgeon Joseph John Plunkett, 9th Brigade, Royal Artillery, who, we believe, lately returned to England from India on sick leave, died at Dublin in September. Mr. Plunkett joined the Army July 14, 1869, and had served for about five years in India. He received his diploma April 20, 1869.

We have also to record the demise of the following members of our profession: Mr. William Giltro, of Hampstead, whose diploma bears date December 20, 1864; and Mr. Frederick Davis, of Queensland, Australia, who received his diploma April 26, 1866.

Correspondence, etc.

ECHINOCOCCI.

To the Editor of the VETERINARY JOURNAL.

SIR,—I have read with much interest the remarks which occur on page 212 of your last issue, in reference to *Echinococci* disease ; but my experience does not enable me to endorse all that is therein stated.

I have seen upwards of a dozen cases of *Endogenous Hydatids* in the liver and lungs of cattle, the kysts being frequently as large as a child's head. In one case the liver was invaded to such an extent as to leave only a very small portion, comparatively, of its structure, and some of that was indurated ; but, withal, the carcase was in as prime condition as I ever saw one.

Most of the cases which have come under my observation have occurred in old Dutch or Iceland cattle. A few, however, and notably one in the practice of Mr. Cartwright, of Whitchurch, and the one I have just mentioned, were in home-bred cattle.

I have also to record the occurrence of the *Exogenous Hydatids* in a common hen here, which was dissected about three months ago by Professor Brandford and myself. In this case the Hydatids were located in the abdominal and pelvic cavities, and were in great numbers, and in sizes varying from the egg of a hen to a millet seed. I know nothing of the history of the case, as the hostess came into our possession accidentally.

I am, yours truly,

T. WALLEY.

Edinburgh,
September 14, 1875.

[We beg to call our readers' attention to a discrepancy existing between the description given by M. Mégnin of the drawings which illustrated his paper (a translation of which is given at p. 211 of this journal), and the plate which contains these drawings (a copy faces the same page). Though this descrepancy has not been noticed in the *Recueil de Méd. Vétérinaire*, probably in consequence of the report of the case appearing in one number and the plate in a later issue, we will, nevertheless, take the liberty of attempting to correct it. Fig. 4 on the plate should be fig. 3 ; fig. 9 should be 4 ; fig. 3 should be 7 ; fig. 7 should be 9, and represents the Hydatid extended at length and magnified ten diameters. Fig. 8, like the last, is not described in the French report, but we may presume that it is intended to represent an ovum of the *Echinococcus* magnified 300 diameters.]

THE EDUCATION OF THE VETERINARY STUDENT.

To the Editor of the VETERINARY JOURNAL.

SIR,—I have read your editorial of this month, in which you have written upon the necessity of improving the general education of the Veterinary Student, and showing how the same has been hitherto neglected. There is no one more anxious than myself with regard to this matter ; for I am of opinion that no progress can be made, if the preliminary examination is such that it may be undertaken by an ordinary school-boy of twelve or fourteen years of age.

You say that the candidate should be compelled to pass in mathematics, English history, geography, Latin and Greek, at least one modern foreign

language, physics, and the rudiments of natural history; but it has occurred to me, that, if all these subjects were strictly enforced, an error would be committed on the other side; for in the present unprotected state of the profession, it is not worth the time and expense that would necessarily be incurred for a student to become so highly accomplished. A young man who is a proficient mathematician, classic, and linguist, is prepared to enter the higher walks in life, such as the bar, and public services, now open to competition, by which means he may rise to an exalted and distinguished position; but which he could never expect by becoming a Veterinary Surgeon. Whatever may be in the future, I may say the time has not arrived for those high scholastic acquirements to be made compulsory for the commencement of a college course; for the present, a medium standard of education can only be enforced. A student should have a fair knowledge of Latin, and a good sound English education to enable him to pursue his studies successfully.*

I wish to speak a few words upon the *status* of our profession. I think it is the duty of every one to endeavour to improve his social standing. It has long been a subject of regret that private practitioners in every part of the kingdom are the proprietors of forges and livery stables; some of them may say they cannot dispense with these invariable adjuncts to their practice. I do not endorse that opinion, but think it may be necessary to employ a practical smith for the purpose of removing shoes, etc., when required; and this may be done without identifying themselves with the trade. Everything depends upon appearances. This is a very objectionable one; and I think it is a great barrier to their admission into society. If they wish to be regarded as gentlemen, and to associate with other professions, I think they must live in a different style, and away from the sound of the anvil. You must admit that neither Greek nor Latin will be of the slightest use to Veterinary Surgeons if they spend their time among blacksmiths and stablemen; and I feel convinced that so long as these establishments are continued the profession will remain *in statu quo*.

Sir,
Your obedient servant,
HENRY BATH, M.R.C.V.S.,
Royal Artillery.

R. A. Barracks,
Newcastle-on-Tyne,
September 1875.

* The subjects we have mentioned as those which should be compulsory in the preliminary examination of the candidates for admission to the Veterinary Schools, are only those which other professions allied to our own demand from their candidates. Greek, Latin, and mathematics—though not great proficiency is expected in these—are compulsory subjects for admission to the medical schools, and are also demanded by the Pharmaceutical Society. Surely a Veterinary Surgeon should be better educated than an apothecary! We must not look at things as they are, but as they should be; and those who are anxious for, and are striving to obtain, improvement, must not rest satisfied until this question of education is settled in a satisfactory manner. The Veterinary profession holds out to well-educated men as good inducements, on the whole, as some other professions; and if many of these men will not enter our ranks, it is not because they have no prospect of making a fairly good and honourable position, but because the standard of education—general and professional—is so low as to be a subject for ridicule and somewhat, we fear, of degradation. A young man who has sufficient intelligence to make a good Veterinary Surgeon, will surely have had time, when he has reached seventeen or eighteen years of age—the period when he might be thinking of entering College—to acquire some knowledge of the subjects we have indicated, to be able to pass an examination in their rudiments at least. A good preparatory education for a profession now-a-days embraces many, if not all, of these subjects; and it is the absence of the tests for this education which renders the present preliminary examination of very little value indeed.—ED. *V. J.*

A DOG TAX.

To the Editor of the VETERINARY JOURNAL.

SIR,—The return to the House of Commons just issued, in reference to the number of sheep worried by dogs in Ireland, is very interesting, and goes to show that some measures should be adopted for the purpose of preventing the evil. Some years ago, I suggested the propriety of castrating all male dogs not required for stud purposes, as a preventive. A gentleman carried out the idea in his district, and upwards of a hundred dogs were operated upon. This had the desired effect of putting a stop to the depredations committed by these animals. Dogs travel from their homes in quest of female dogs which are on "heat," and they are known to run several miles for this purpose. During these journeys they fall in with sheep and worry them. *When castrated, they remain at home, and protect the property of their owners.*

"FIVE POINTS."

CONTAGIOUS PLEURO-PNEUMONIA IN IRELAND.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Allow me to congratulate you upon the issue of your journal: it reflects credit upon all concerned in its "get up."

It is needless to state that it was high time a little new blood was thrown into veterinary literature, and it is sincerely to be hoped that success will crown the endeavours of the promoters of the *Veterinary Journal.*

We hear a good deal about Pleuro-pneumonia not being in existence in Ireland, simply because no cases of any moment are reported at "*head-quarters.*" This is no proof of its non-existence in the country; but it goes to show that the stock-owners are able to throw *dust* into the eyes of "*the powers that be.*" It is well known that some localities are never free from the disease.

It may be asked how it is that the owners of diseased animals escape detection. There are several causes to account for this; namely, firstly, having been once "in the list" of infected farms, and obtaining a clean bill of health in due course, no suspicion is attached to those persons, who reported their cases; secondly, most complaints are termed "*Murrain*" by the farmers; so that if an animal is sick, and enquiries made by an officer of police, he is satisfied when told it is "Murrain." But what are we to say in reference to those animals exported to England? Surely the inspectors at the ports will guard against exporting diseased animals? This depends very much upon circumstances. *Is it possible to ascertain, under any circumstances, whether a beast is affected with Lung-disease in its first stages?* If the incubative stage continues for three or more weeks, then it is simply impossible to diagnose Lung-disease. Again, in what manner are the animals inspected? If my memory serves me, they are driven on board the ship, and the inspector is desired to stand at the gangway, for the purpose of learning the condition of the lungs of all those animals which are hurriedly driven past him! This *used* to be the manner such things were ordered in Ireland, by the chief of the veterinary department. Now the utter absurdity and worthlessness of such inspection must be apparent to every one.

It is difficult to trace disease from Ireland to a distant part of England. Assuming that an animal in Ireland is apparently free from Lung-disease at the time it is sent on board ship, and that it travels about from place to place, sometimes in a shed, at another in a field, at another in a railway truck, besides numerous other possible sources of contagion, it is not wonderful

that there is difficulty in tracing such a complaint. It must be confessed that everything is extremely quiet in Ireland at the present moment; but, if any person is anxious to know if Pleuro-pneumonia exists in Ireland, it is only necessary to walk past the various butchers' shambles, in order to satisfy himself. It is not too much to state, that highly diseased animals are frequently purchased by most respectable men, and the flesh sold with impunity; and no suspicion is attached to them *owing to their respectability.*

Many changes are absolutely necessary in the management of the inspection business, before things will become satisfactory; but these changes are not likely to occur at present.

I am, dear sir,
Yours truly,
FIVE POINTS.

IMPORTANT TO THE VETERINARY PROFESSION.

To the Editor of the VETERINARY JOURNAL.

SIR,—I am a resident veterinary surgeon in Lincolnshire, and take in the *Stamford and Rutland Mercury*, which I happened to peruse last Saturday (August 21st). In the marriage announcements I saw the following notice: "At Caunton Church, on the 5th inst., Charles Benjamin Chapman, M.R.C.V.S., (son of John Chapman, Gainsboro'), to Emma Millicent, eldest daughter of George Pinder, of Caunton Common." I need hardly say that this man is merely a quack, or unqualified person, and that he holds no certificate of any description whatever. Upon reading the above advertisement, I was simply amazed; and I think that, being a member of the Royal College of Veterinary Surgeons, I am in duty bound to the other members and also to the young aspirants of the profession, to expose this matter, which, undoubtedly, ought to be taken up. Therefore I wrote to Professor Simonds, sending him a copy of the advertisement, and I am in receipt of the folowing:—

"*Camden Town, August 23rd*, 1875.

"DEAR SIR,—Your letter is one which should have been forwarded to the Secretary of the Royal College of Veterinary Surgeons, and I have therefore sent it on to him. The matter must be dealt with by the Council of the College. It is one which the authorities of this college have nothing to do with; the adoption of the title is an infringement of the charter granted to the profession, not of the one possessed by the Royal Veterinary College.

"I am, yours faithfully,
"JAS. B. SIMONDS."

This, I hope and trust, will receive the attention of the Council, who ought not to lose sight of a matter of so serious a nature as this. For instance, I have a son who, in due course, all being well, will aspire to be a M.R.C.V.S., but I undoubtedly will strongly protest against his becoming a qualified member of the profession, if he can adopt this title without a diploma; as I consider the time and money expended in acquiring that which, when thoroughly looked into, is of so little use and benefit to all its members, completely thrown away, if there be no power to prevent this assumption. In conclusion, I beg merely to state that after this exposure, and provided the abuse cannot be prevented, it is a perfect fallacy for any young man to bind himself with a M.R.C.V.S. for two, three, or four years, and pay a heavy premium, then go to college, pass a preliminary examination, followed by college fees, etc., and other examinations. I write this short epistle to show how we stand, and hope our position will be contemplated by every member

of the profession. I consider it most unjust that an unqualified man can assume the title of "Veterinary Surgeon," and quite intolerable that he should be allowed to adopt that of M.R.C.V.S.

I am, yours truly,
AN OBSERVER.

[We certainly think it is now high time that steps should be taken to check such bare-faced imposition as the assumption of the title of "Veterinary Surgeon" or "Member of the Royal College of Veterinary Surgeons," by dishonest persons. An injunction could undoubtedly be obtained to restrain this disgraceful and injurious practice, and if the Royal College of Veterinary Surgeons cannot take up such cases, then the Mutual Defence Association should exert its influence. It is extremely probable that the impostors would have to bear the legal costs.]

NOTICES TO CORRESPONDENTS.

THE papers from correspondents which could not be inserted in this number of the *Veterinary Journal* shall appear in our next. The other cases kindly forwarded by Mr. Lancelot T. Barker, as also the continuation of Mr. W. A. Cox's paper on "Contagious Pleuro-pneumonia in Ireland and Norfolk," will likewise be inserted.

Owing to the very large number of valuable communications so generously contributed by our friends, we have been unable to carry out our project of introducing an extended notice of contemporary literature as fully as we had intended; but we shall endeavour to do so in future numbers.

Communications, Letters, Books, etc., Received.

COMMUNICATIONS have been received from A. Kershaw, Kirton Lindsey; "An Observer;" M. J. Harpley, Royal Horse Guards, Windsor; J. Colam, Royal Society for the Prevention of Cruelty to Animals; A. Inglis Macallum, Edinburgh; W. A Cox, Ashbourne; Professor McEachran, Montreal; Professor Walley, Edinburgh; Professor McBride, Cirencester; W. Field, Junr., London; H. Bath, Royal Artillery, Newcastle-on-Tyne; J. W. Hill, Wolverhampton; Professor Duguid, Brown Institution, London; S. E. Stone, M.D., Massachusets; J. Lambert, 17th Lancers, Dublin; Staff Veterinary Surgeon J. Collins, Dublin; W. Broughton, Leeds; "Five Points;" W. H. Coates, London; J. C. Hingston, Leeds; J. C. Broad, London; L. T. Barker, Skelton-in-Cleveland; J. Woodger, Junr., London; "Hippo-Chirurgus;" M. Palfrey, Manchester; Professor Fearnley, Lerwick.

BOOKS, ETC.: *C. S. W. Cobbold, M.D.*, Ueber Ohrblutgeschwulst von Geisterkrankheiten; *S. E. Stone, M.D.*, Malignant Pustule, Charbon Fever; *Professor Wehenkel*, Panzooties parmi les Animaux Domestiques: *Haussmann and Walther*, Parasites de Organes Femelles de l'Homme et de quelques Animaux.

The *American Agriculturist;* the *Cambridge Express;* the *Scotsman; Land and Water;* the *Medical Press and Circular;* the *Midland Counties Evening Express;* the *Broad Arrow.*

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publishers, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded addressed to the Editor, "Veterinary Journal," Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.

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